Urgent Care Dermatology

SYMPTOM-BASED DIAGNOSIS

James E. Fitzpatrick, MD
Whitney A. High, MD

CONSULTING EDITOR | W. Lamar Kyle, MD

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JAMES E. FITZPATRICK, MD
Professor of Dermatology and Pathology (retired)
University of Colorado School of Medicine
Aurora, Colorado

WHITNEY A. HIGH, MD, JD, MEng
Associate Professor, Dermatology and Pathology
Director of Dermatopathology (Dermatology)
University of Colorado School of Medicine
Aurora, Colorado

W. LAMAR KYLE, MD
Private Practice
Urgent Care
Fort Smith, Arkansas

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1600 John F. Kennedy Blvd.
Ste 1800
Philadelphia, PA 19103-2899

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Director, Content Development: Rebecca Gruliow
Publishing Services Manager: Patricia Tannian
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This book is dedicated to
my sons, Jeff and Josh
-JEF
and
Misha, Madison, and Morgan – "my three M's"
-WAH

Preface

"Everything should be made as simple as possible, but not simpler."

ALBERT EINSTEIN

Urgent Care Dermatology: Symptom-Based Diagnosis had its genesis on a bass fishing trip on the Arkansas River in 2000. Lamar Kyle, a private practice physician, who had worked in an emergency room and urgent care clinic environment for decades, complained to me, an academic dermatologist, that dermatology textbooks were not organized in a useful fashion. He opined that dermatology books for a primary care provider needed to be organized by physical findings and not grouped by pathogenesis, needed copious photographs, and needed written text to be short and to the point. From this pivotal conversation, this textbook was born.

We caught very few fish, but when I returned home, I started outlining the book and experimenting with formats. For years, the book was something that I worked on early in the morning before the family woke up and on planes when traveling. After 7 years, the book had begun to take shape and was about two-thirds finished when a simultaneous computer disaster on two different computers containing the original and backup versions of the book brought the project to a halt. An older version of the manuscript on a third computer was found, but more than 100 completed pages of the manuscript were absent in this dated version. Disheartened, my interest in returning to work on the manuscript lagged, and the venture lay in limbo. The project was brought back to life by my energetic colleague, Whitney High, who worked with me in the Department of Dermatology at the University of Colorado. He offered to help write portions of the book and bring the book into a publishable state.

The concept of the book was simple. First, the dermatologic diseases needed to be organized by physical findings and not by pathogenesis. Whereas this would on the surface appear to be easy to do, it was difficult because we were using a morphologic model that is rarely utilized in dermatology textbooks. Second, cutaneous disorders that had a significant mortality rate or that were more likely to present urgently to a primary care provider were emphasized, and many trivial or genetic disorders were excluded. Third, the provided text, with very few exceptions, had to be kept to a single page. Finally, the book had to have numerous quality photographic examples of each entity.

We hope that we have succeeded in our objectives and that this will be a book that is actually used in the clinical setting while the practitioner is actively seeing patients, and not a book that sits on the shelf gathering dust.

James E. Fitzpatrick, MD
Aurora, Colorado

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The senior author (JEF) would especially like to acknowledge Linda Belfus, Senior Vice President of Content, for her role in not just this book but for other projects and for bringing us into the Elsevier family. I have worked with Linda for more than 20 years. Linda retired near the end of the editorial process, and I wish her happiness in her retirement.

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Chapter 1
Introduction to Clinical Dermatology

"THINKING" LIKE A DERMATOLOGIST

The skin represents the largest organ of the human body. It consists of the epithelium, dermis, subcutaneous fat, and adnexal structures (hair follicles and glands), as well as supportive structures (blood vessels and nerves), all of which function to protect and maintain homeostasis.

Dermatology is a field of medicine that focuses on the skin, adjacent mucosa (oral and genital), and other adnexal structures (e.g., hair, nails, and sweat glands). Undoubtedly, dermatologists are the most adroit diagnosticians with regard to skin disease. However, much of their acumen comes from pattern recognition, a cultivated appreciation for diagnostic subtleties, and trained recognition of historical factors that make one particular disease more likely than another.

Thus, any clinician may improve when diagnosing and treating skin ailments simply by learning to think like a dermatologist. This includes fostering an appreciation for the classification schemes used in dermatology and for learning descriptive terminologies used by dermatologists.

ETIOLOGIC PREMISES

With regard to etiology, one of the most basic branch points in dermatology is to decide if a skin condition is neoplastic (benign or malignant) or inflammatory (e.g., rash, infection, autoimmune condition). Although it is likely that inflammatory conditions will prevail in urgent care and emergency settings, one must realize that a patient may present to these types of clinics with a neoplasm that has been ignored too long, until it can no longer be neglected.

Moreover, on occasion, there is visual and conceptual overlap with regard to inflammatory versus neoplastic conditions. For example, mycosis fungoides, the most common form of cutaneous T cell lymphoma, is a clonal lymphoproliferative disorder (a neoplasm), yet its clinical presentation resembles that of an inflammatory disorder. Conversely, sarcoidosis is an inflammatory condition that may present with discrete nodular lesions that mimic those of a neoplasm.

MORPHOLOGY

In dermatology, the term *morphology* refers to the appearance of a skin lesion(s), irrespective of the underlying pathophysiology. For example, a small blister is referred to as a *vesicle,* whether it is due to an infection (e.g., herpes simplex) or autoimmune condition (e.g., bullous pemphigoid).

Therefore, it is important to use correct morphologic terms to classify skin diseases. This is because these terms represent a native language, or lexicon, that allows professionals to describe skin disease in a consistent manner.

There are primary morphologic terms (Table 1.1), which refer to the characteristic appearance of skin lesions (e.g., *papule*), and secondary morphologic terms (Table 1.2), which are used in addition to primary morphologic terms. These secondary morphologic terms reflect exogenous factors or temporal changes that evolve during the course of a skin disease.

PALPATION AND APPRECIATION OF TEXTURE

Textural changes are appreciated by palpating the skin; doing so may provide diagnostic clues. For example, macules and patches are flush with the surrounding skin, whereas papules and plaques are palpable. Some forms of connective tissue disease, such as morphea and scleroderma, may cause induration (firmness) of the skin, even when visual findings are limited. Finally, purpura (hemorrhage into the skin) may be palpable or nonpalpable, which implies a different underlying pathology. Small-vessel vasculitis causes palpable purpura, whereas simple bruising causes macular nonpalpable purpura.

COLOR

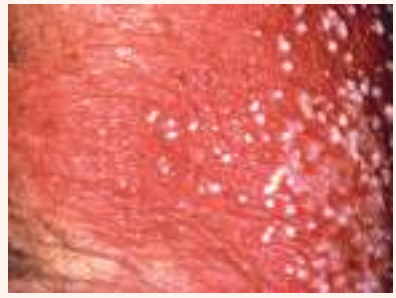
Skin color provides important clues about the nature of a disease process. For example, many skin lesions appear erythematous (red). However, it is important to ascertain whether the erythema is blanching, which disappears with pressure, because this suggests that the erythema is due to vasodilation, or whether it is nonblanching erythema (purpura), which implies hemorrhage into the skin. Other causes of pigment in the skin include hypoxia, topical medications, oral drugs, other ingestants, or even infections.

Also, there is variation in normal skin tones, even in the general population. These variations in skin color are due to differences in the amount and distribution of melanin in the epidermis. Sometimes, the term *skin of color* is used to describe any skin tone darker than white skin, but dermatologists more often use the Fitzpatrick scale (see "Fitzpatrick Skin Types"

TABLE 1.1 Primary Morphologic Terms

Morphologic Term	Salient Features	Classic Disease Image	Classic Diagnoses
Macule (or patch)	• Flat lesion <1 cm in diameter (macule) >1 cm in diameter (patch) • Circumscribed • Color change that cannot be appreciated by tactile sensation alone		• Vitiligo (photo) • Café-au-lait spot • Flat component of exanthems (measles) • Freckle • Lentigo
Papule	• Elevated lesion • Usually <1 cm in diameter • Often with other secondary features (e.g., scale, crust)		• Lichen nitidus (photo) • Elevated component of exanthems (measles) • Melanocytic nevi • Verruca or molluscum • Lichen planus • Guttate psoriasis
Plaque	• Elevated lesion • Usually >1 cm in diameter • Nonvesicular • Often with other secondary features (e.g., scale, crust)		• Psoriasis vulgaris (photo) • Lichen simplex chronicus • Eczematous plaques • Granuloma annulare • Sarcoidosis
Nodule	• Large elevated lesion • Usually ≥2 cm in diameter • Involves the dermis and may extend into the subcutis		• Neurofibromata (photo) • Basal cell carcinoma • Cutaneous lymphoma • Erythema nodosum • Lipoma
Vesicle	• Small elevated lesion • <1 cm in diameter • Filled with clear fluid • Circumscribed		• Herpes simplex infection (photo) • Varicella zoster infection • Dermatitis herpetiformis

TABLE 1.1 Primary Morphologic Terms—cont'd

Morphologic Term	Salient Features	Classic Disease Image	Classic Diagnoses
Bulla	• Elevated lesion • Usually >1 cm in diameter • Filled with clear fluid • Circumscribed		• Epidermolysis bullosa (photo) • Bullous drug eruption • Bullous pemphigoid • Linear immunoglobulin A disease • Pemphigus • Porphyria
Pustule	• Elevated lesion • Usually <1 cm in diameter • Filled mainly with purulent fluid • Circumscribed		• Pustular psoriasis (photo) • Acute generalized exanthematous pustulosis • Candidiasis • Folliculitis • Subcorneal pustular dermatosis
Wheal	• Firm edematous papule or plaque • Evanescent • Pruritic		• Urticaria (photo) • Dermatographism • Urticaria pigmentosa

Fitzpatrick Skin Types

Type I	Always burns, never tans
Type II	Usually burns, then tans
Type III	May burn, tans well
Type IV	Rarely burns, tans well
Type V	Very rarely burns, tans well, brown skin
Type VI	Very rarely burns, tans well, dark brown skin

box), which describes skin color based on a response to sun exposure.

Baseline pigmentation also affects cutaneous findings in skin disorders. For example, erythema may be difficult to appreciate in darker skin. Keloids (aberrant scarring) are more common in those with darker skin types. Even after a disease process has resolved, postinflammatory hypopigmentation and postinflammatory hyperpigmentation are more marked (or more evident) in those with darker skin types.

Cyanosis is also more difficult to appreciate when the skin is more darkly pigmented.

CONFIGURATION AND DISTRIBUTION

A dermatologist must always analyze two closely related properties—configuration and distribution—to find the correct diagnosis. The configuration, or arrangement of skin lesions, includes descriptors such as linear, annular, arciform, clustered, reticulated, dermatomal, and retiform. For example, pruritic and fragile vesicles, arranged in clusters on the elbows and knees, should prompt consideration of dermatitis herpetiformis. Grouped vesicles on an erythematous base, but confined to a single dermatome, mandates consideration of herpes zoster.

Assessment of distribution includes stepping back and observing the anatomic pattern of skin lesions on the body. For example, plaques of psoriasis often favor extensor surfaces—elbows and knees; atopic dermatitis often favors flexural surfaces in older children and adults (antecubital and popliteal fossae), and lichen planus favors other flexural surfaces (wrists and

TABLE 1.2 Morphologic Terms for Secondary Skin Lesions

Morphologic Term	Salient Features	Classic Disease Image	Classic Diagnoses
Crust	• Collection of dried serum, cellular debris • Antecedent primary lesion (e.g., dermatitis, vesicle)		• Impetigo (photo) • Resolving dermatitis • Resolving vesiculobullous disorders
Erosion	• Partial loss of the epidermis • Variable size • Often red, oozing base		• Secondary finding in many bullous lesions that have broken (photo depicts pemphigus) • Superficial trauma
Ulcer	• Full-thickness loss of the epidermis and dermis • Heals with scarring		• Ulcerated necrobiosis lipoidica (photo) • Arterial ulcer • Chancroid • Primary syphilis • Stasis ulcers
Excoriation	• Partial loss of the epidermis and superficial dermis • Often linear • May be associated with scars from old excoriations		• Neurotic excoriation (photo) • Pruritic vesiculobullous disorders (e.g., dermatitis herpetiformis) • Pruritic dermatitis
Fissure	• Vertical loss of epidermis and dermis • Sharply defined walls (crack)		• Many forms of dermatitis (photo) • Xerosis

ankles). It is also important simply to notice if the condition is focal or generalized, unilateral or bilateral, and sharply circumscribed or more difficult to perceive. These factors will ultimately shape the final differential diagnosis.

Terminology that is encountered frequently in dermatology includes discussion of a seborrheic distribution, which includes the head, neck, and upper trunk, areas with a high density of sebaceous oil glands, and use of the term *photodistributed,* which describes an accentuation in areas exposed to ultraviolet light (e.g., the face, parts of the neck outside of the natural shadow beneath the chin, upper chest, forearms, dorsal hands). Connective tissue disease and

some drug-induced processes may show a photodistributed pattern.

TEMPORAL COURSE

The temporal course is central to any medical history, and dermatology is no exception. All patients presenting with skin lesions should be queried about duration and any change in intensity or distribution over time. For example, some inflammatory conditions, such as measles, pityriasis rubra pilaris, and dermatomyositis, have a notorious cephalocaudal progression over time.

However, the examiner is always at an advantage because the skin is so readily accessible. Any information provided by the patient can be readily compared to observations made on physical examination.

Armed with some basic knowledge of the skin, the clinician can usually determine whether cutaneous lesions are acute, subacute, or chronic by observation. For example, because of the relative transit times of proliferating skin, true scale (not to be confused with crust) requires 2 weeks to develop. Similarly, lichenification, or thickening of the skin, with accentuation of normal skin markings, takes weeks or even months to develop. Therefore, if scale or lichenification is apparent, then the skin problem has been present for more than a few days, no matter what the patient may believe or has noticed.

OTHER HISTORICAL INFORMATION

A complete discourse on the pertinent aspects of history cannot be adequately addressed in this short introduction. Moreover, the finer details are better learned in association with specific diseases. Suffice it to say that there is always a need to take a good history regarding when, where, what, who, and how. The patient may be asked the following questions:

When did the rash (or lesion) develop, or for how long do you remember having the condition?
- When have you had similar eruptions in the past?
- When have you sought care in the past?

Where were the first lesions on your body?
- Where did the condition progress to next on the body?
- Where were you when you first noticed the condition (e.g., traveling, at home, at work)?
- Where have you sought care in the past (for records or phone consultation)?

What has been done about the condition to date?
- What makes the problem better?
- What makes the problem worse?
- What were you told about the condition by other professionals in the past?
- What was the plan for any follow-up (if it is a known condition)?
- What other relevant past medical history do you have?
- What kinds of medical conditions do you see a physician for regularly or take medications for on a regular basis?

Who has weighed in on this problem in the past (e.g., primary care provider, other urgent care or emergency care provider, dermatologist)?
- Who is in charge of your general health care?
- Who would have other information about your skin condition that you would like me to speak with, given your explicit permission? Who can you follow up with regarding this condition (is there a primary care physician [PCP] or dermatologist you have seen, now or in the past)?

How sick is the patient? This is a question an urgent care or emergency provider is uniquely equipped to answer. Perhaps the patient has other issues that take precedence over his or her long-term, noncritical, non–life-threatening skin complaint(s). If so, it may be necessary to acknowledge this skin complaint but defer work until another visit or the patient sees another clinician.

CONCLUSION

In summary, dermatology is a discipline that can definitely be learned. Although one cannot expect to master the entire domain of dermatology to the same degree as a dermatologist, who has completed an entire residency in the subject, any clinician can improve in the approach to patients with skin complaints simply by focusing on the following:

- Etiologic premise. Is this an inflammatory or neoplastic condition?
- Morphology. What morphologic term can be applied to the native lesion(s) of the condition (macular, maculopapular, papulosquamous, vesiculobullous, etc.)? Are there secondary morphologies (excoriated, lichenified, crusted, impetiginized, etc.)?
- Palpation. Are there any textural features, detected by palpation, which may be useful in refining the morphologic descriptors of the lesion(s), such as scaling, crusting, induration, and palpable or nonpalpable purpura?
- Color. What colors are identifiable in association with the condition? If there is erythema present, is it blanching or nonblanching (purpura)? Is the patient's own background skin tone such that the color of the lesion may be altered or more difficult to perceive?
- Configuration and distribution. What is the configuration of the lesions (linear, annular, reticulated,

retiform, etc.), and how is the condition distributed upon the body (flexural areas, extensor surfaces, photodistributed, etc.)? Is it focal or generalized? Is it unilateral or bilateral? Does it involve mucosal surfaces or not?

- Temporal course. Has the condition evolved over days, weeks, months, or even years?
  - Has it changed in its appearance (or its primary morphology) during that time?
  - Was it initially macular or maculopapular and then became bullous?
  - Is it waxing and waning over time?
  - Is it worsening or improving?
- Other historical information. Clearly, any final questioning and discourse will be affected by the specific disease categories under consideration. However, it is always important to focus on questioning that is broad enough to describe any items in the general medical history more fully, such as determining when, where, what, who, and how.

Simply thinking like a dermatologist, without learning any additional dermatologic information, will not meaningfully affect the care rendered. If the information in this chapter is kept in mind, particularly as one reads the rest of this text—which will fill in the gaps with regard to basic skin disease—there is little doubt that treating dermatologic ailments will be easier for you, as a clinician, and more rewarding for the patients under your care.

Chapter 2
Diagnostic Techniques

Key Terms
Saucerization biopsy
Tinea corporis

EQUIPMENT NEEDED

This chapter, on diagnostic techniques, not only discusses how to perform the procedures, but also lists the type of equipment needed to perform these techniques.

Purchase of Equipment

There are numerous medical supply houses that supply surgical and diagnostic equipment that can equip an emergency room or an office adequately. Although we do not have any financial interest in this company, we can recommend Delasco, which has a complete line of equipment directed for dermatologists, including anything mentioned in this text.

Core cutaneous surgical equipment

- Scalpel, no. 14 blade
- Scalpel handle
- 3-mm disposable punch
- 4-mm disposable punch
- Curved iris scissors
- Suture scissors
- Tissue forceps (e.g., 4-inch iris with teeth)
- Needle holders

Optional cutaneous surgical equipment

- 2-mm disposable punch
- 5-mm disposable punch
- 6-mm disposable punch
- 8-mm disposable punch
- Flexible, double-edged razor blades

Core diagnostic equipment

- Microscope
- Mineral oil
- Mycologic media—Sabouraud agar (plates, tubes or slants)
- 10% to 20% potassium hydroxide (KOH) solution, with or without dimethyl sulfoxide (DMSO)
- Glass slides and coverslips

Optional diagnostic equipment

- Antifungal stains (as alternatives to KOH)
  - Chlorazol black fungal stain
  - PMS fungal stain
  - Swartz Lamkins fungal stain
  - Methylene blue Triton X (for *Malassezia* yeast)
- Dermatophyte test medium (DTM)
- Tzanck stains
  - PMS Tzanck stain
  - Wright-Giemsa stain
- Wood light (Wood lamp)

WOOD LIGHT

Introduction

The Wood light or Wood lamp emits long-wave UV light (black light) that is filtered by a Wood filter (barium silicate and nickel oxide) that only allows a band of UV light between 320 and 400 nm (peak, 365 nm) to be emitted.

Applications

- Diagnosis of fluorescent species of tinea capitis
- Diagnosis of erythrasma
- Examination of porphyrins in urine in porphyrias, such as porphyria cutanea tarda (Fig. 2.1)
- Examination for *Propionibacterium acnes* in patients with acne vulgaris (Fig. 2.2)
- Demonstration of hypopigmentation and depigmentation in light-skinned individuals
- *Pseudomonas aeruginosa* infection (e.g., burns, ulcers)
- Detection of tetracycline deposition in children's teeth

Supplies

- Wood light (Wood lamp)
- Wood lights are available as small, portable, battery-powered units or as larger units with a cord

Technique

- Completely darken the examination room and allow your eye to accommodate.
- Turn on the lamp and allow it to warm up for 30 to 60 seconds.
- Hold the lamp approximately 4 to 6 inches from examination site.

Interpretation

- A positive examination result for tinea capitis consists of yellow-green or blue-green fluorescence of the broken hair shafts caused by the production of a compound called *pteridine.* Care must be taken not to confuse this with fibers and lint from clothing that may fluoresce a white color (due to optical brightening agents) or scale mixed with sebum that may demonstrate a dull yellow color.
- A positive test for erythrasma demonstrates a coral red fluorescence confined to the areas of infection. The color is due to a water-soluble porphyrin (coproporphyrin III) produced by the bacteria *Corynebacterium minutissimum*. The porphyrins are water-soluble and, if the patient has recently bathed, the test will be negative because the fluorescent porphyrins will be washed out.
- In acne vulgaris, untreated patients will demonstrate follicular coral red fluorescence. In treated patients, if fluorescence is still present, the patient is not using the medication or the *Propionibacterium acnes* is now resistant to the antibiotics.
- A positive test for urinary porphyrins is the demonstration of coral red fluorescence in the urine. If the amount of uroporphyrins is low, only the meniscus will demonstrate the color, but if the quantitative porphyrin level is high, the entire sample will demonstrate coral red fluorescence.
- *Pseudomonas* infections show a greenish fluorescence due to the pigment pyoverdin.
- Hypopigmented or depigmented skin in fair-skinned individuals is accentuated with a Wood light.
- False-negative results may occur in acne vulgaris and erythrasma if the patient has recently bathed.
- False-positive fluorescent substances include some cosmetics, deodorants, soaps, lint, and petrolatum.

Comments

The Wood light has severe limitations in the diagnosis of tinea capitis because most infections in the United States are due to nonfluorescent species, especially *Trichophyton tonsurans*. The only species that is commonly fluorescent in the United States is *Microsporum canis,* which only accounts for about 5% to 10% of cases.

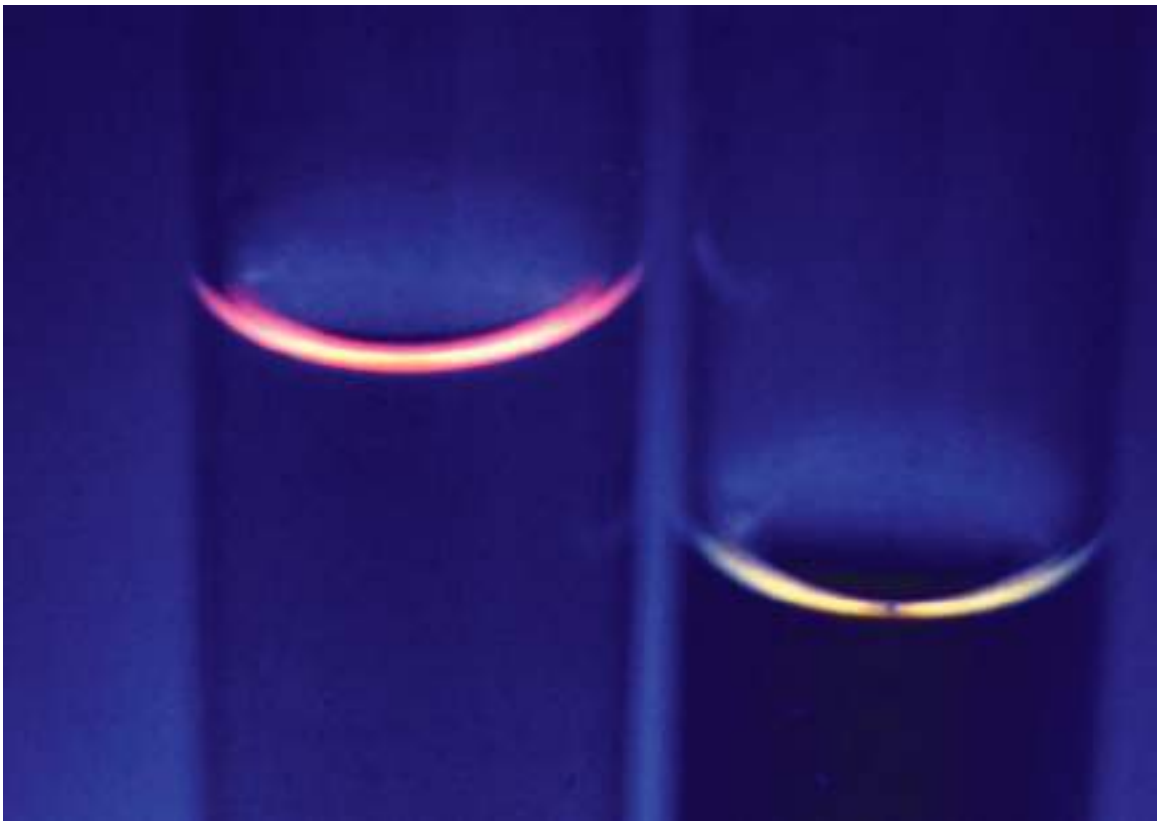


Fig. 2.1. Wood light examination of urine demonstrating coral red fluorescence in a patient with porphyria cutanea tarda. Fluorescence can be accentuated by adding dilute hydrochloric acid. *Left,* Positive. *Right,* Negative. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

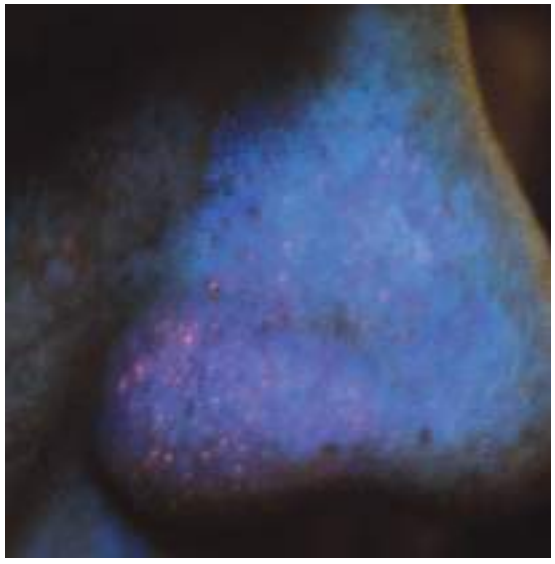


Fig. 2.2. Wood light examination of a patient's nose demonstrating coral red porphyrins produced by *Propionibacterium acnes*. Because this patient is under treatment for acne, this finding indicates that the patient is not taking the antibiotic or the organism is resistant to the antibiotic. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

POTASSIUM HYDROXIDE PREPARATION

Applications

- Diagnosis of dermatophytes and yeast infections of the skin and mucous membranes

Supplies

- Microscope glass slide
- Coverslip (any size)
- No. 14 or 15 scalpel blade
- KOH, 10% to 20% concentration (Fig. 2.3). Variants include the following:
  - KOH, 10% to 20%, with DMSO
  - KOH, 10%, with DMSO and chlorazol black
- Access to a microscope

Technique

- For **tinea corporis,** the best samples are from annular edges with scale.
- Wet the area with an alcohol pad or, if in a sensitive area, with water.
- Gently scrape the site (you should not draw blood) and gather as much scale on the edge of the scalpel blade as possible. It is best to do this on more than one site to ensure that you have enough material (Fig. 2.4).
- Transfer the material on the edge of the scalp to the glass slide and spread it across the slide.

Warning!
Be very careful not to get the KOH on the microscope objectives because KOH can permanently etch the lens. Obviously, anything that will etch glass should not come into contact with the skin of patients, the staff, or yourself.

- Apply one or two drops of KOH to the slide (Fig. 2.5) and coverslip.
- If the coverslip is not even, gently press with your finger.
- Blot any excess KOH at the edges of the coverslip.
- If DMSO is used, wait for 1 minute to examine.
- If DMSO is not used, gently heat (do not boil) the glass slide to enhance clearing of the keratinocytes (Fig. 2.6).
- The hyphae are easier to visualize if the condenser is dropped. The amount that it needs to be dropped is variable and depends on the amount of light used and thickness of the specimen.

Interpretation

- A positive examination consists of demonstrating hyphae (dermatophyte infections), short hyphae and yeast (tinea versicolor), or yeast (candidiasis; Figs. 2.7 and 2.8). Other fungal species are only rarely seen on the skin or skin appendages.
- Fragments of clothing fibers and refractile material between the keratinocyte walls may lead to confusion. The false hyphae-like structures seen between keratinocytes can be differentiated by their angulated appearance, lack of linear shape for long distances, and tendency to break up. They also do not demonstrate nuclei that can sometimes be seen in hyphae.
- Epithelial lipids and exogenous lipids (e.g., moisturizers) may be difficult to differentiate from yeast. In general, they are more irregular in shape and lack nuclei. In some cases, there is so much exogenous lipid that it is almost impossible to interpret the specimen.

Comments

- Performing KOH examinations of the skin and mucous membrane samples is increasingly becoming a lost art because of Clinical Laboratory Improvement Amendments (CLIA) regulations. However, for those who carry out a KOH examination, or learn how to do it, it is frequently the quickest and is often the more sensitive test when compared to cultures. KOH examinations of mucosal scrapings are easier to interpret than scrapings from skin, hair, and nails, and some health care providers may want to limit this study for mucosal lesions.

Fig. 2.3. *Top row,* Fungal KOH (with and without DMSO). *Bottom row,* Four different types of fungal stains. *Far right,* Special glass slides with adhesive tape used for the diagnosis of tinea versicolor.

Fig. 2.4. After wetting the skin of a patient with suspected tinea pedis, the area is gently scraped with a no. 15 scalpel blade. Because the stratum corneum (scale) is the material of interest, the procedure should not draw blood.

Fig. 2.5. A single drop of KOH is placed on the scale and then cover-slipped. Note that the physician is wearing gloves—remember that KOH is toxic to the skin.

Fig. 2.6. After being cover-slipped, the KOH preparation is gently heated over a flame. If the KOH contains DMSO, this step can often be omitted. After heating, the slide is ready to be examined under the microscope.

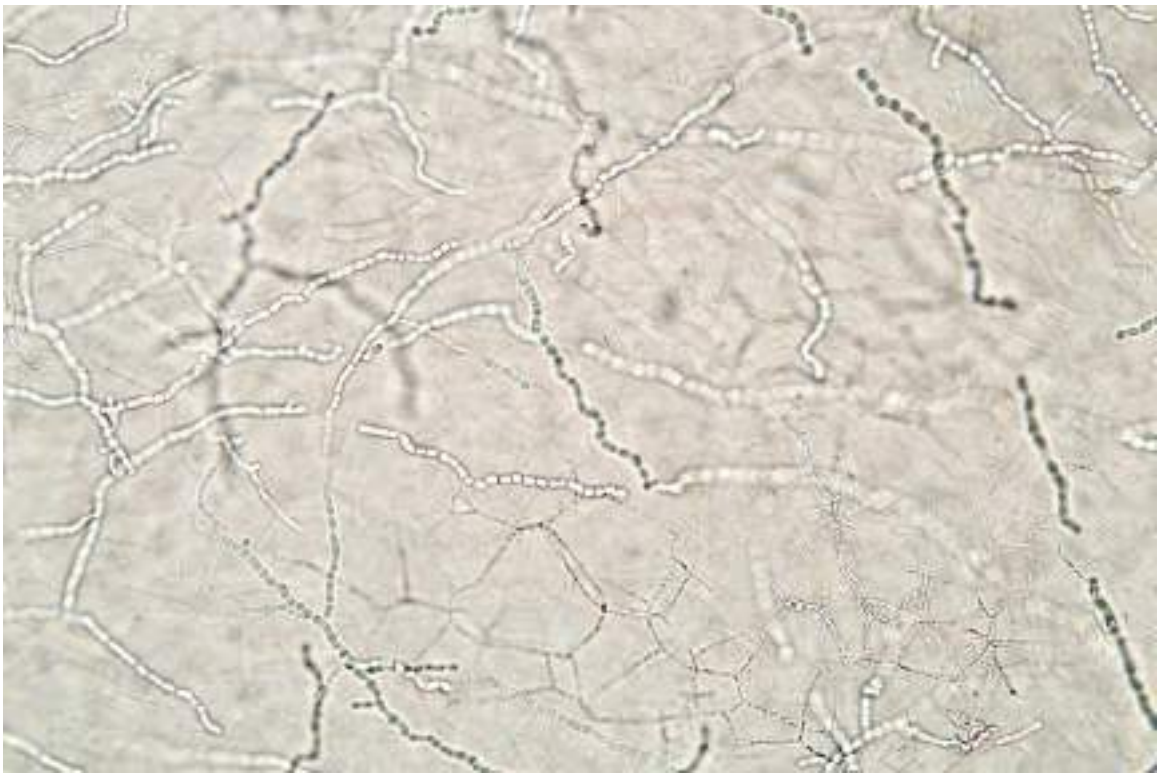


Fig. 2.7. Positive KOH finding of patient with tinea pedis demonstrating numerous linear segmented hyphae. The thin lines represent the cell walls of the keratinocytes (KOH, 400×).

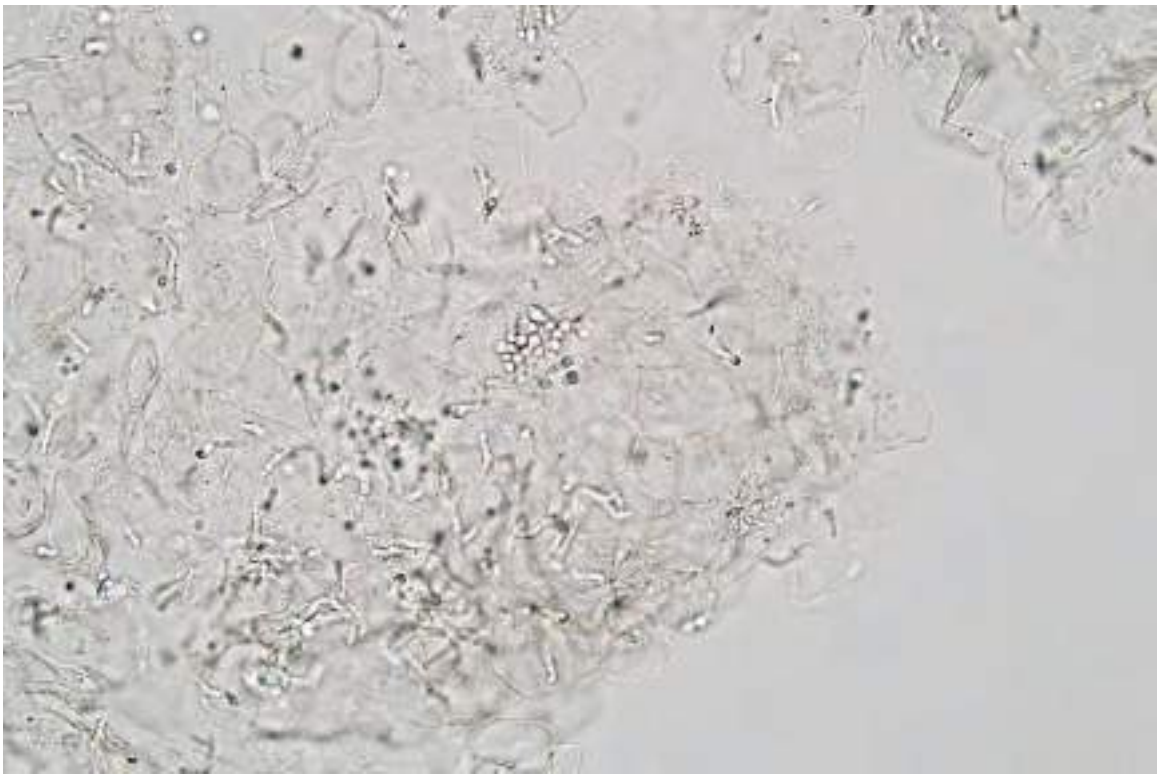


Fig. 2.8. Positive KOH finding of patient with tinea versicolor demonstrating numerous refractile, clumped yeast and short hyphae (so-called spaghetti and meatballs) (KOH, 400×).

MINERAL OIL PREPARATION

Application

- Diagnosis of scabies

Supplies

- Microscope glass slide
- Coverslip
- No. 14 scalpel blade (handle is not needed)
- Mineral oil is generally used, although any clear oil can be used (e.g., vegetable oil).
- Access to a microscope

Technique

- Place one drop of oil on one or more suspected burrows.
- If no suspected burrows are seen, place one drop of oil on multiple small papules.
- The scraping should be superficial enough so that no blood is produced because the level of the burrow is just below the cornified layer of skin. It is important to understand where the mite lives (Fig. 2.9).
- Gently scrape with a no. 15 scalpel blade that is held at an approximately 45- to 80-degree angle (Fig. 2.10) or use a disposable curette.
- As you scrape, the oil and superficial layer of skin will transfer to the blade (Fig. 2.11).
- Transfer the scraping to a microscope glass slide (Fig. 2.12).
- Use a coverslip.
- Examine at a low power (40×) to intermediate power (100×) for mites, eggs, or feces (Figs. 2.13–2.15).

Interpretation

- A positive test result is the unequivocal demonstration of the mite, egg, or feces (scybala).

Comments

Although some texts state that the scraping needs to be done vigorously, this does not mean that you should be scraping deep enough to draw blood. The photograph of an H&E stained slide clearly demonstrates the very superficial location of the mite (see Fig. 2.9).

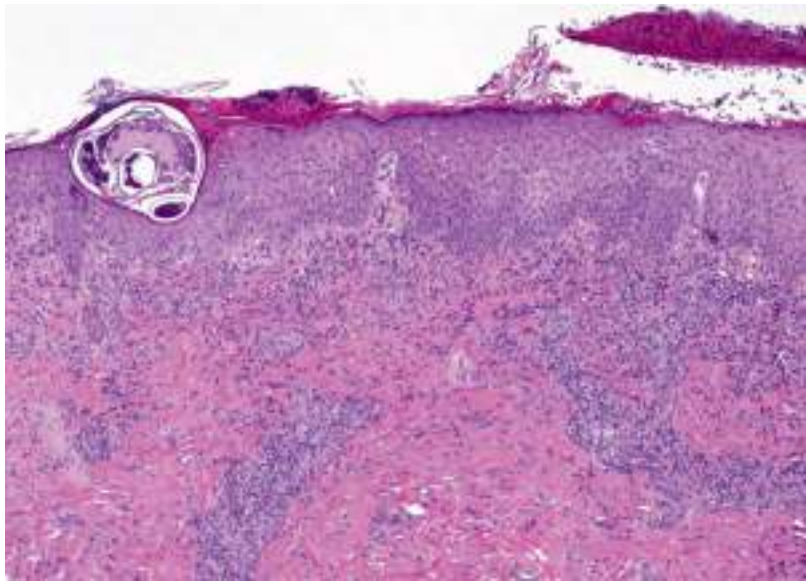


Fig. 2.9. This H&E biopsy nicely demonstrates the level of the mites. They are typically in a burrow below the cornified layer, with the burrow often pushing into the epidermis. The scraping does not need to be down to the level of the blood vessels, and the ideal preparation should be bloodless and thus painless to the patient (H&E, 100×).

Fig. 2.10. After placing mineral oil on a patient with suspected scabies, one or more sites are gently scraped with a no. 15 scalpel blade.

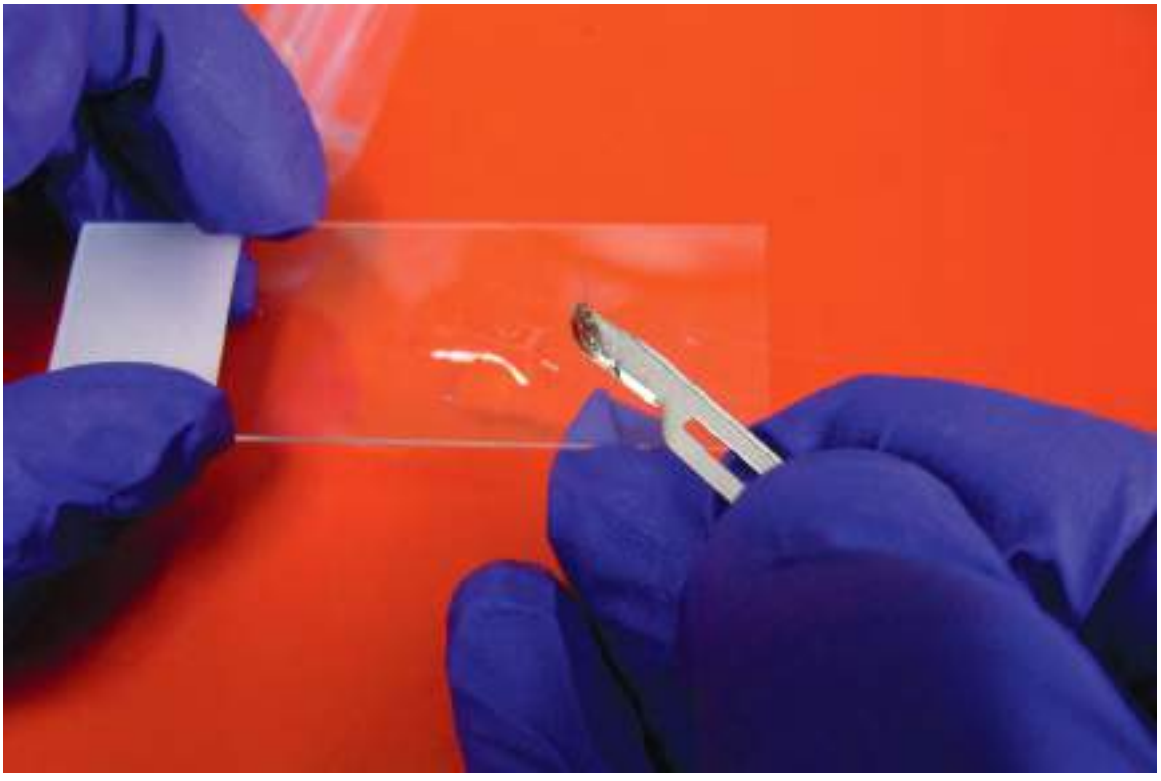


Fig. 2.11. Collected mineral oil and debris are transferred using the scalpel blade. This scraping contains blood, suggesting that the scraping was unnecessarily aggressive.

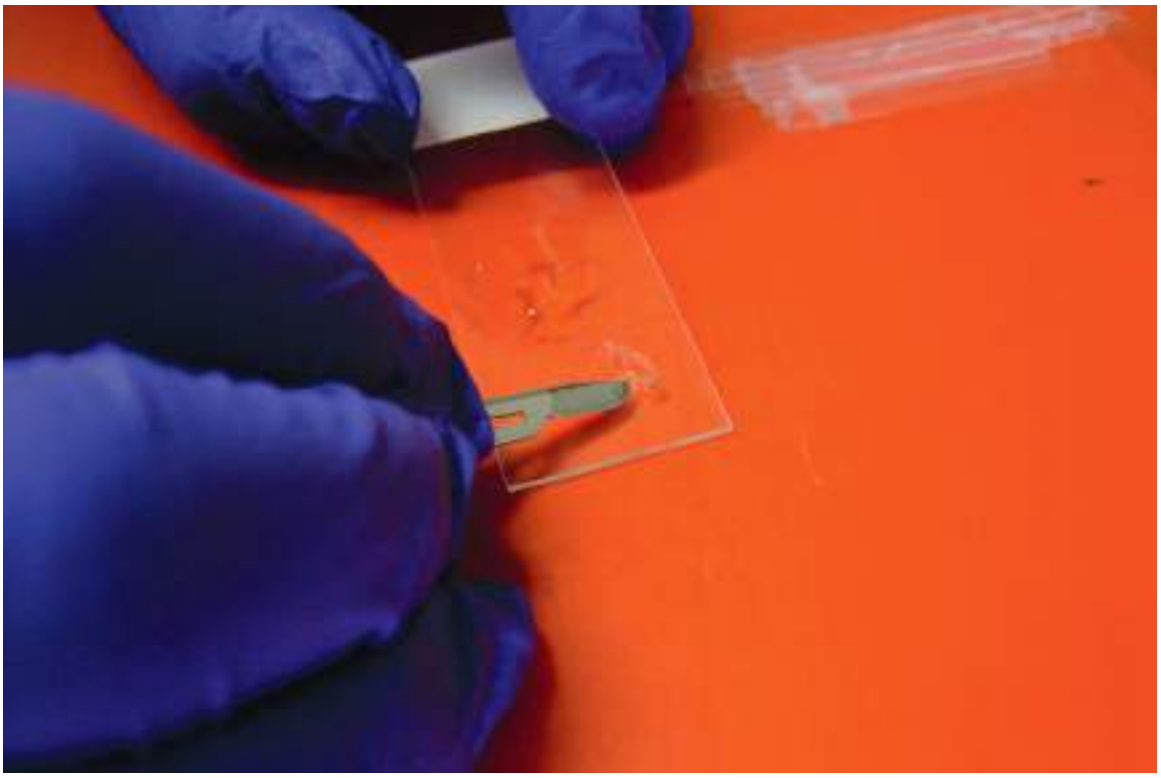


Fig. 2.12. The collected scraping is transferred to a glass slide, which is then cover-slipped. Additional oil can be added if necessary.

Fig. 2.13. Positive scraping demonstrating scabies mite (mineral oil, 200× original magnification, cropped).

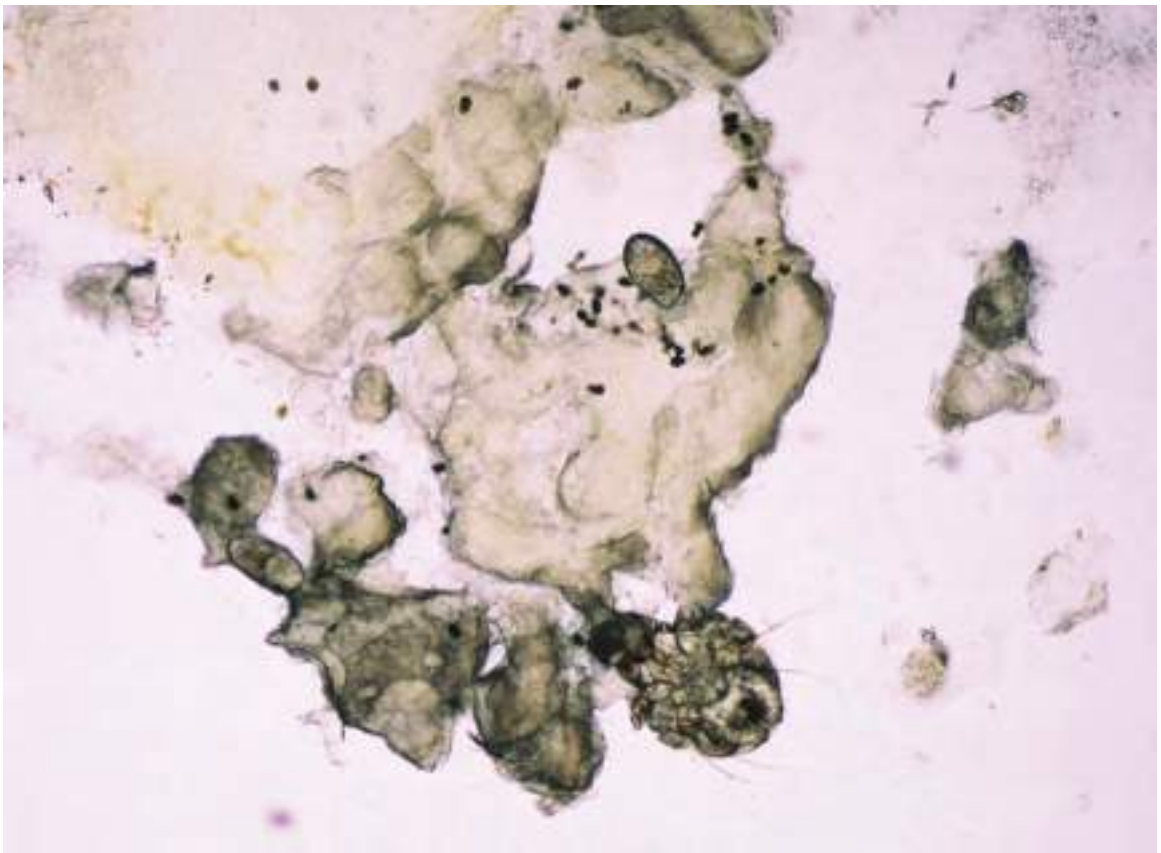


Fig. 2.14. Positive mineral preparation for scabies demonstrating mite, eggs, and scybala (mineral oil, 200×).

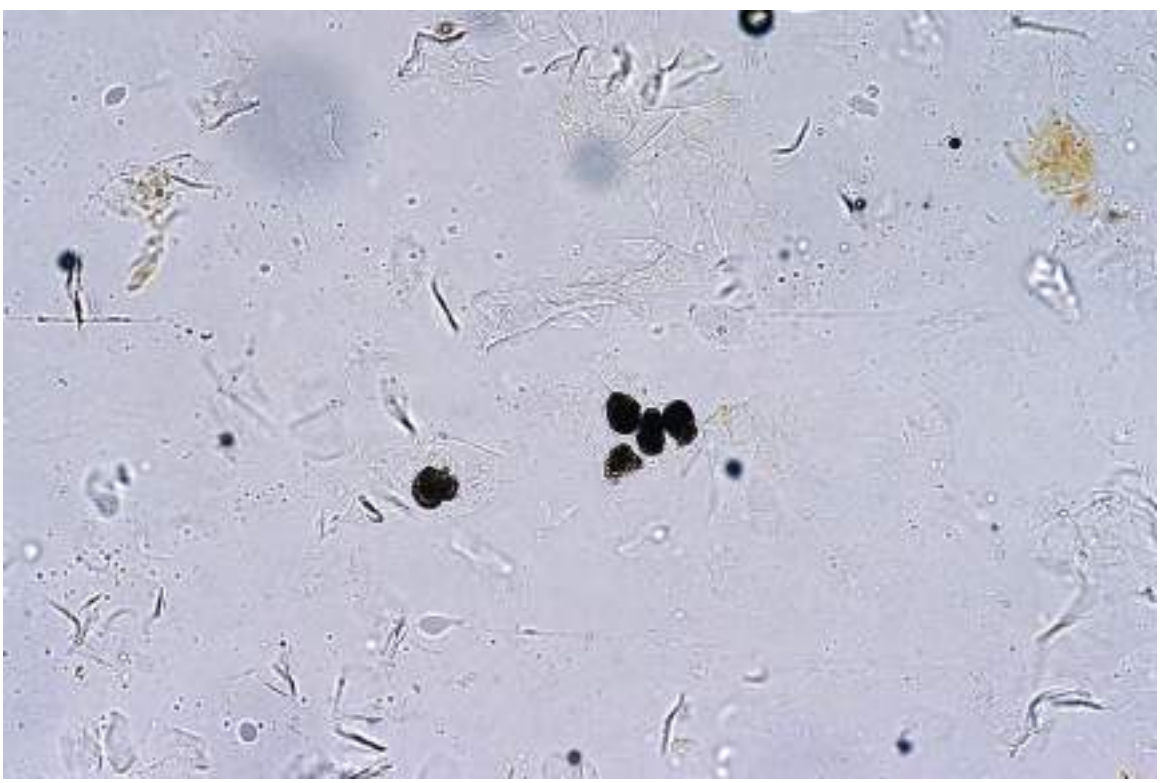


Fig. 2.15. Positive mineral oil preparation demonstrating diagnostic scybala (feces). The scybala are the dark brown oval structures in the center of the field (mineral oil, 400×).

TZANCK PREPARATION

Applications

- Herpes simplex virus infections
- Varicella-zoster virus infections, including chickenpox and herpes zoster (Fig. 2.16)

Supplies

- Stains that can be used include Giemsa, Wright-Giemsa (Fig. 2.17), toluidine blue (see Fig. 2.17), methylene blue, and Papanicolauo (Pap) stains.
- Microscope glass slide
- Coverslip
- No. 14 scalpel blade (handle is not needed)

Technique

- Clean site with saline or alcohol pad.
- Slice blister with a no. 14 blade and fold back blister roof, leaving a hinge (Fig. 2.18).
- Scrape the top of the blister roof with the blade and gently smear on the slide (Fig. 2.19).
- Then gently scrape the bottom of the blister with the blade (Fig. 2.20).
- If the lesion is crusted, the base of the lesion is bluntly scraped with a scalpel blade.
- Transfer the material from the scalpel to the slide (Fig. 2.21) by touching the slide repeatedly with the blade. If there is still material on the blade, gently smear it on the slide. Thus, transfer the material from the blade to the slide as gently as possible.
- Stain with one of the appropriate stains, use a coverslip, and examine under a microscope.

Interpretation

There are two diagnostic cytopathic variants. The classic finding is that of a multinucleated giant keratinocyte (Fig. 2.22; see Fig. 2.21). In some cases, only enlarged rounded keratinocytes with a solitary nucleus are present.

Comments

The results vary with the expertise of the examiner, age of the lesion, and quality of the stain; however, in one study, the sensitivity was 80%. The specificity has varied in different studies, from 73% to 100%. In other studies, the Tzanck preparation produced a diagnostic sample in about two-thirds of vesicular lesions and about half of pustular lesions. Once there is an ulcer or scale crust, the chance of obtaining a diagnostic specimen drops to about 1:6. Pap stains are almost always readily and quickly available in hospitals, and we have used this on numerous occasions when evaluating inpatients.

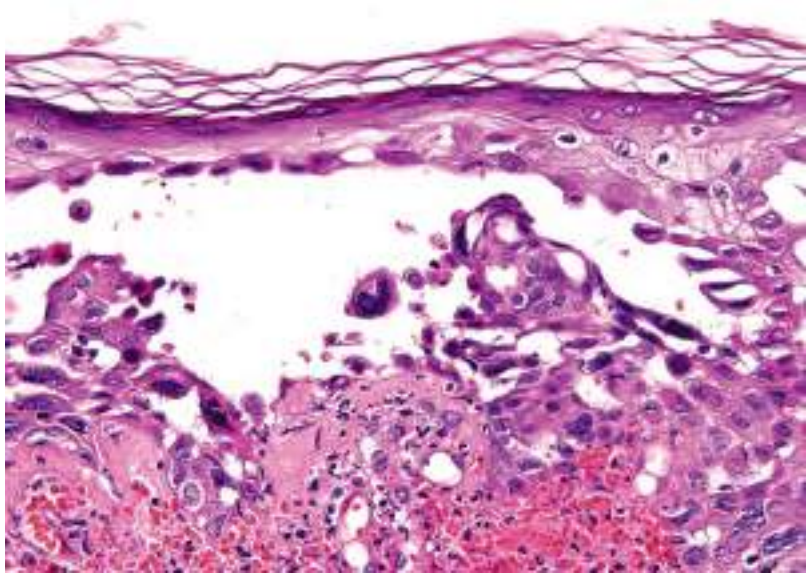


Fig. 2.16. This H&E-stained biopsy of a blister in a patient with herpes zoster demonstrates an intraepidermal split that is very near the dermis. Although a gentle scraping of the lesion is desired, some specimens will be contaminated with blood (H&E, 400×).

Fig. 2.17. Examples of stains used for Tzanck preparations. These include a Wright-Giemsa stain and PMS fungal Tzanck stain (toluidine blue–based stain).

Fig. 2.18. An intact blister in a patient with suspected herpes zoster is horizontally sliced so that the contents of the blister cavity are exposed.

Fig. 2.19. The blister is now opened and reflected on a hinge of epidermis. The base and roof of the blister are now gently scraped while attempting to transfer the contents of the blister cavity to the top of the scalpel blade.

Fig. 2.20. The blister contents and material obtained from scraping the base and roof of the blister have been transferred to a glass slide. The specimen is now ready for staining.

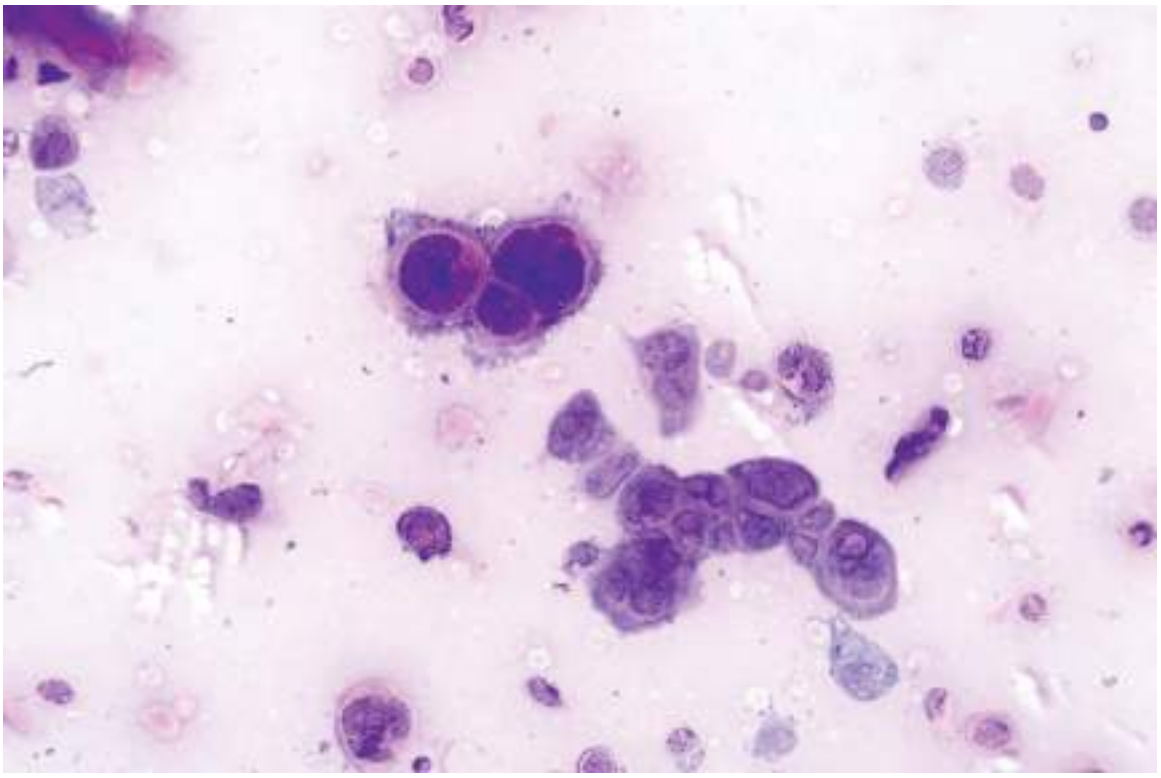


Fig. 2.21. Wright-Giemsa–stained specimen of a patient with herpes zoster demonstrating numerous multinucleated keratinocytes with swollen nuclei (400×).

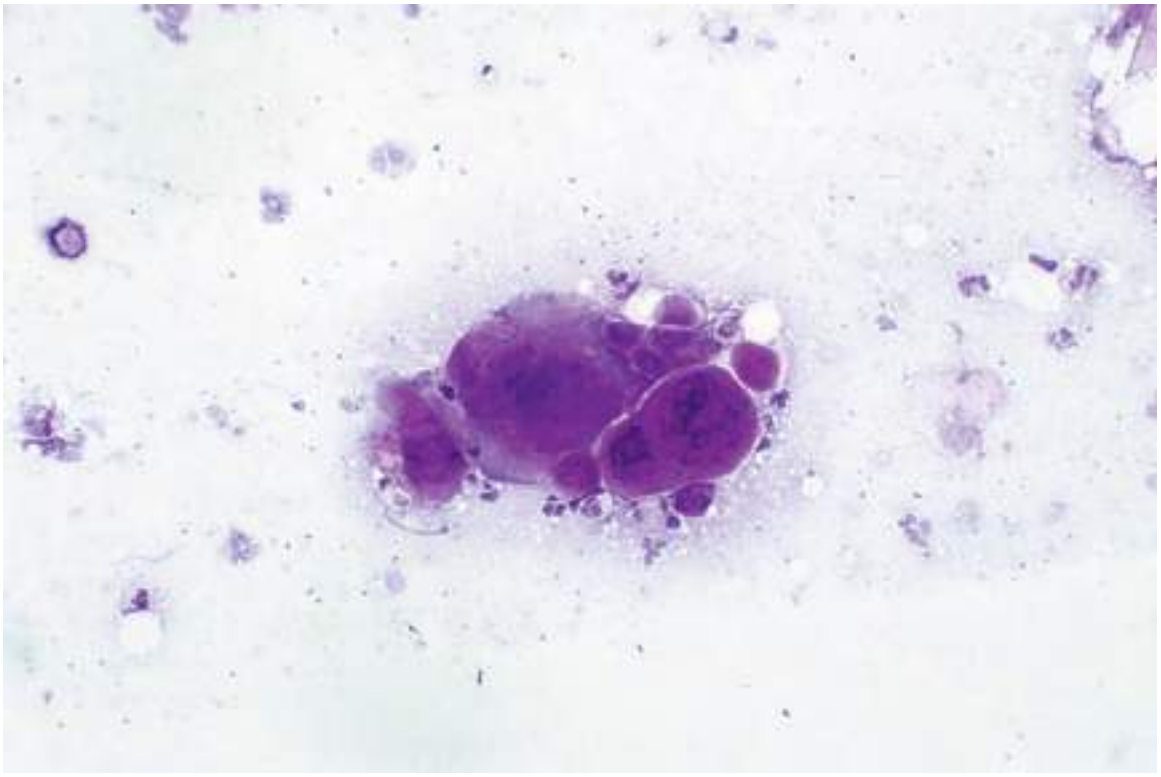


Fig. 2.22. High-power view (400× original magnification, cropped) of a Tzanck preparation taken from a patient with herpes zoster infection. The preparation nicely demonstrates a diagnostic aggregate of multinucleated keratinocytes and swollen nuclei.

SHAVE BIOPSY

Applications

This is used for the diagnosis of benign and malignant papular or nodular lesions, especially those that are somewhat exophytic (Fig. 2.23).

Saucerization biopsy is a deeper shave biopsy that is typically done with a razor blade, which can be curved so that it extends to the midreticular dermis or even the subcutaneous fat. It is used for lesions that are deeper or for complete removal of smaller lesions.

In general, a shave biopsy is not the best choice for most inflammatory disorders; however, in bullous disorders it is often superior to punch biopsies for routine H&E histology and direct immunofluorescence. Punch biopsies, because of the twisting motion, are more likely to separate the top of the blister from the base of the blister, which will hinder interpretation.

Supplies

- Local anesthetic agent, usually 1% lidocaine, with or without epinephrine (typically need about 0.1–0.5 mL) injected into the superficial or mid-dermis, and 1-mL (or larger) syringe with a 27- to 30-gauge needle
- Common razor blade or scalpel with an attached no. 14 scalpel or a no. 10 scalpel for large lesions (Fig. 2.24)

Technique

With Razor Blade

- Local anesthesia with 1% lidocaine containing epinephrine (Fig. 2.25). This can be used on all sites but should not be used on digits because, very rarely, patients may develop intense vasoconstriction.
- Stabilize the skin with the opposite hand.
- The dominant hand holds the razor blade between the thumb and forefinger or middle finger. If the middle finger is used, the forefinger can be used to stabilize and push down on the center of the blade and control the curvature. Controlling the curvature also allows control of the depth and width of the shave biopsy (Fig. 2.26).
- The razor blade is then gently moved side to side through the lesion (Fig. 2.27).
- The specimen will usually be attached to the top of the razor blade. Remember to put the biopsy in the specimen container! It is all too easy to forget that the specimen is on top of the blade and throw the razor blade away in a sharps receptacle before the specimen is removed (Fig. 2.28).
- Hemostasis may be accomplished by time or pressure or the use of topical aluminum chloride or Monsel solution.

With Scalpel Blade

- The first two steps are the same as for a razor blade shave biopsy, except that the blade is held parallel to the skin and the specimen is moved with a single sweeping motion. In some cases, it may require several cutting movements.

Comments

Shave biopsies are typically expected to leave a white scar, although occasionally, in older patients, the scar may be so minimal that it is not visible. The site of a shave biopsy done for all benign, premalignant, and malignant neoplasms should always be diagrammed in the chart in case further treatment is needed. There have occasionally been horror stories of the wrong lesion being treated later because of poor documentation of the site. If digital photographs are available that can document the site in the chart, this is even better.

Fig. 2.23. Suspected squamous cell carcinoma partially outlined by ink. Note the background of numerous actinic keratoses.

Fig. 2.24. Typical shave biopsy setup with a razor blade or no. 14 scalpel. The setup also includes aluminum chloride and Monsel solution for hemostasis.

Fig. 2.25. 1% lidocaine with epinephrine is injected around and under the tumor. Ideally, the entire lesion should blanch before proceeding with the biopsy.

Fig. 2.26. Razor blades can be broken in half, as in this case, or can be used intact. Note that the blade has been curved with lateral pressure so that the deeper portions of the lesion can be removed.

Fig. 2.27. The lesion is removed with a slow back and forth motion.

Fig. 2.28. The removed lesion is ready for placement in a formalin-containing specimen bottle. The base of the lesion is now ready for hemostasis with 20% aluminum chloride, petrolatum, and a dressing.

PUNCH BIOPSY

Applications

- Punch is the preferred sampling technique for the assessment of most inflammatory skin conditions. The one potential exception involves blisters that are larger than the diameter of the punch biopsy. The rotating motion of a punch biopsy will often separate the roof from the base of the blister, which may hinder microscopic examination.
- It is useful for the diagnosis and complete removal of some skin tumors.

Supplies

- Local anesthetic agent and 1-mL syringe with a 27- to 30-gauge needle
- Disposable 3-, 4-, 5-, 6-, and 8-mm punch biopsy
- In the past, reusable all-metal punch biopsies were used. However, most facilities now have disposable punch biopsies consisting of a hollow metal cylinder with a sharp cutting edge attached to a plastic handle (Fig. 2.29).

To Suture or Not to Suture

A prospective randomized trial has compared the outcomes of 4- and 8-mm biopsies that were randomized to heal by secondary intention or with closure with interrupted 4-0 nylon sutures. At 9 months, there were no differences in the clinical appearance, as evaluated blindly by three physicians. Even though there were no cosmetic differences, patients still preferred closure of the 8 mm wounds with sutures.

From Christenson LJ, Phillips PK, Weaver AL, Otley CC: Primary closure vs second-intention treatment of skin punch biopsy sties. A randomized trial. *Arch Dermatol* 141:1093-1099, 2005.

Technique

- Local anesthesia is carried out with 1% lidocaine containing epinephrine (Fig. 2.30).
- The punch is pushed into the skin with a downward twisting movement (Fig. 2.31).
- In most cases, once the dermis is breached, there will be a distinct give to the sensation (Fig. 2.32). At this point, proceed more slowly to prevent going too deeply in areas with potential underlying structures (e.g., tendons on the back of the hand, large nerves, large blood vessels).
- Handle the tissue with care. Gently pull the punched-out specimen as much as possible and cut the base as far down as possible to maximize the amount of tissue that is submitted (Fig. 2.33). Try to avoid spearing the biopsy sample or crushing it with forceps because these may produce artifacts that make it more difficult for the pathologist or dermatopathologist to interpret (Fig. 2.34).

Comments

A punch biopsy is easily done and is one of the most important diagnostic techniques for diagnosing inflammatory disorders and removing small tumors. The diagnostic yield in inflammatory disorders is improved if specimens are taken from more than one site and if specimens are taken from lesions at different stages of evolution. When possible, avoid secondarily infected lesions and lesions that are not intact (e.g., ruptured blister or excoriated lesion).

Fig. 2.29. Setup for punch biopsy. *Bottom row, left to right,* 2-, 3-, 4-, 5-, 6-, and 8-mm punch biopsies are shown.

Fig. 2.30. After marking the location, 1% lidocaine with epinephrine is used to blanch the biopsy site.

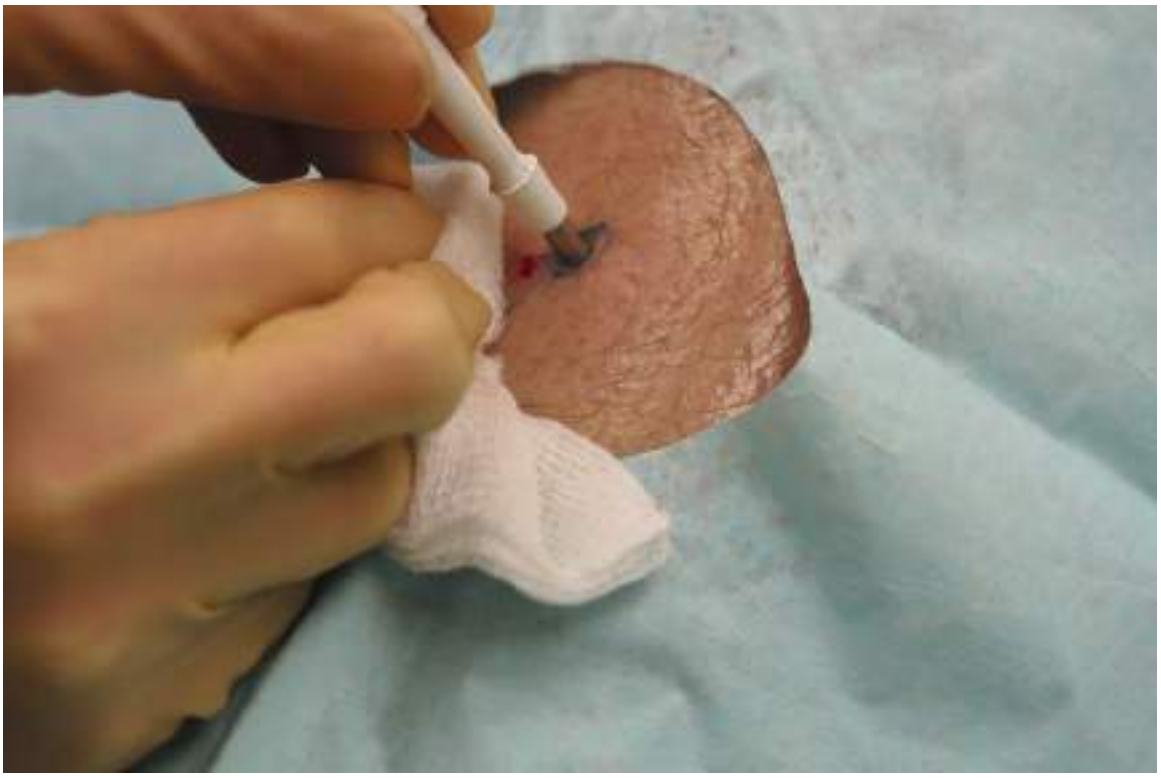


Fig. 2.31. The punch biopsy is started with gentle to moderate pressure and rotated back and forth.

Fig. 2.32. The punch biopsy is slowly twisted until the desired depth is reached. On some areas, such as the trunk, the biopsies are carried to the hub, as seen here, but in other areas, such as the back of the hand, where there are tendons, the depth is more superficial.

Fig. 2.33. The punch biopsy is gently pulled up with a forceps, and the base is released with an iris scissor.

Fig. 2.34. After release of the base, the specimen is removed and placed in a formalin-containing specimen jar. After hemostasis is achieved, the defect can be left open to heal secondarily or sutured (see "To Suture or Not to Suture" box).

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Chapter 3
Morbilliform Eruptions

Morbilliform eruptions are eruptions that resemble measles. The term is derived from the Latin word for measles, *morbilli.* Morbilliform reactions are never due to external factors and always indicate an internal problem; the most important are viral and drug reactions, and connective tissue disorders are a distant third.

IMPORTANT HISTORY QUESTIONS

How long have your spots been present?

Most morbilliform eruptions present acutely (e.g., morbilliform drug eruptions, morbilliform viral eruptions, rickettsial infections), whereas some disorders, such as lupus erythematosus, are more likely to be chronic or recurrent.

Differential Diagnosis of Morbilliform Reactions

Common

- Morbilliform drug eruptions
- Morbilliform viral eruptions (many)

Uncommon

- Severe drug hypersensitivity reaction
- Lupus erythematosus
- Rickettsial infections
- Serum sickness
- Roseola vaccinatum

Have you started any new medications in the last 10 days?

This is a very important question, because a morbilliform drug eruption is a common cause of this pattern. Oral antibiotics are the most common cause of morbilliform reactions.

Have you had any fever?

This question is directed toward determining a potential infectious cause, such as a viral or rickettsial infection.

Do you have any other medical problems?

This question can produce an abundance of important clinical information, including a history of a connective tissue disorder or mononucleosis. Mononucleosis is notorious for producing morbilliform reactions when the patient has been given ampicillin.

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the lesions?

Most morbilliform eruptions do not have a characteristic distribution; however, some, such as Rocky Mountain spotted fever, tend to start acrally, whereas unilateral thoracic exanthem, as the name implies, typically is predominantly unilateral at its initial presentation.

Presence or absence of lesions in the oral mucosa

Oral lesions are more frequently seen in some but not all morbilliform viral eruptions and are usually absent in morbilliform drug eruptions and rickettsial infections.

Are any blisters present?

Morbilliform eruptions, by definition, do not have blisters; however, it is important to remember that some eruptions may initially appear to be morbilliform (e.g., very early erythema multiforme) before they blister. Obviously, if blisters are present, the differential diagnosis and thought process change.

Do any of the lesions demonstrate hemorrhage?

Focal hemorrhage, especially minute areas of hemorrhage on the lower extremities, can occur in morbilliform viral and drug eruptions. The presence of hemorrhage obviously raises the possibility of Rocky Mountain spotted fever or even a very early leukocytoclastic vasculitis.

Do any of the lesions demonstrate a reticulated (netlike) appearance?

A morbilliform eruption with a reticulated appearance should raise the possibility of erythema infectiosum; however, reticulated patterns are not specific and may occasionally be seen in other morbilliform eruptions.

Morbilliform Drug Eruptions ICD10 code L27.0

Pathogenesis

The pathogenesis of a morbilliform drug eruption is not understood, and very little research has been directed toward resolving the mechanism(s) involved. The frequent development of morbilliform drug eruptions precipitated by ampicillin in a patient with Epstein-Barr virus infection and by sulfonamides in a patient with HIV infection suggests that an altered immune system may be important in some cases. This might explain why not all patients develop a morbilliform reaction when rechallenged later. An older study has demonstrated antipenicillin antibodies, an interesting finding, but one that has not been verified by other studies.

Common Offending Drugs

- Ampicillin
- Allopurinol
- Penicillin
- Phenytoin (Dilantin)
- Sulfonamides

Clinical Features

- Morbilliform drug eruptions typically begin 3 to 10 days after administering the offending drug.
- In most cases, lesions are primarily located on the trunk.
- The primary lesion is a 1- to 10-mm blanchable macule that can demonstrate coalescence into large patches of erythema (Figs. 3.1–3.3).
- Symptoms range from absent to significant pruritus.
- Lower extremity lesions may demonstrate focal hemorrhage.

Serum Sickness

Morbilliform reactions may also be a component of serum sickness. Serum sickness is characterized by a cutaneous eruption (urticaria, morbilliform dermatitis, and purpura or erythema multiforme), fever, joint involvement (arthritis or arthralgias), edema, and lymphadenopathy.

Diagnosis

- Drug exposure history is critical. The exposure period of interest is usually 3 to 10 days, but occasional cases may fall outside of this range.
- Skin biopsies typically demonstrate a superficial perivascular lymphocytic dermatitis. This pattern is not diagnostic and can be seen in other morbilliform reactions, including viral morbilliform exanthems, which can be clinically identical. Most cases do not require a biopsy. If a biopsy is needed, always do a 3- or 4-mm punch biopsy, never a shave biopsy.
- Check a complete blood count (CBC). An elevated eosinophil count favors a drug eruption, and a very high eosinophil count may suggest a severe drug hypersensitivity reaction, a drug reaction with eosinophilia and systemic symptoms (DRESS).
- Liver function tests (LFTs) should be ordered when DRESS is a clinical consideration.

Treatment

- Discontinue the offending medication. Although cases may resolve with continuation of the drug, occasional cases demonstrate continued progression to full body erythema.
- Use symptomatic treatment measures, such as sedating antihistamines (e.g., diphenhydramine), in patients who are markedly pruritic. There is no evidence to suggest that the clinical course is altered or shortened by antihistamines.
- Rare cases may require topical corticosteroids or a brief course of oral corticosteroids.

Clinical Course

In most cases, the reaction will start to subside within 1 to 3 days and be completely resolved in 7 to 10 days.

Fig. 3.1. Morbilliform drug eruption due to a sulfonamide antibiotic. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 3.2. Morbilliform drug eruption secondary to penicillin. (From the William Weston Collection, Aurora, CO.)

Fig. 3.3. Morbilliform drug eruption due to oral penicillin. Note the focal confluence of macules into the patches of erythema. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Pathogenesis

The pathogenesis of DRESS is not understood, but it is clearly an immunologically mediated hypersensitivity syndrome. The eosinophils are thought to be related to interleukin-5 released by stimulated T cells. This constellation of findings has also been referred to as *drug hypersensitivity syndrome*.

Drugs Implicated in DRESS

- Allopurinol
- Carbamazepine (Tegretol)
- Lamotrigine
- Minocycline
- Phenobarbital
- Phenytoin (Dilantin)
- Piperacillin-tazobactam
- Salazopyrin
- Sulfasalazine
- Trimethoprim
- Valproic acid

Clinical Features

- Clinical features typically begin 1 to 8 weeks after starting the drug.
- Lesions are located on the face, trunk, and extremities, primarily on the trunk in many cases.
- Early primary lesions are 1- to 10-mm blanchable macules that quickly coalesce into large patches of erythema (Figs. 3.4–3.6).
- Facial (hallmark of the disease) and limb edema are frequently present (see Fig. 3.4).
- Symptoms range from being absent to significant pruritus.
- Clinical variations include primary lesions that are pustular, bullous, or purpuric.
- Lymphadenopathy is frequently present.
- On the CBC, eosinophilia may be profound, with variable numbers of atypical lymphocytes.
- Hepatitis may be mild to severe and potentially fatal.
- Other organ systems that may be involved include the brain, lungs, heart, and kidneys.

Diagnosis

- A drug exposure history is critical. The exposure period of interest is usually 2 to 6 weeks before the onset of the eruption, but occasional cases may fall outside of this range.
- A 3 or 4 mm punch biopsy (never a shave biopsy) will demonstrate nonspecific findings. It typically demonstrates a superficial perivascular lymphocytic dermatitis, with variable numbers of eosinophils. A biopsy may help exclude other diseases.
- A minimal initial laboratory evaluation would include LFTs and a CBC, with a differential diagnosis.

Treatment

- The offending or suspected offending medications should be discontinued immediately. Although cases may resolve with continuation of the drug, occasional cases demonstrate continued progression to full body erythema and a fatal outcome.
- Oral corticosteroids, at a dose of 40 to 60 mg/day, is the treatment of choice. Therapy may need to be maintained for weeks or even 1 month or longer.

Clinical Course

The mortality rate has been reported to be as high as 10% in untreated patients.

Fig. 3.4. Patient with DRESS demonstrating characteristic facial erythema and edema. (Courtesy Dr. Tim Chang.)

Fig. 3.5. Patient with DRESS demonstrating macular erythema of the trunk. (Courtesy Dr. Tim Chang.)

Fig. 3.6. Patient with DRESS with confluent truncal macular erythema. (Courtesy Dr. Tim Chang.)

Morbilliform Viral Eruptions ICD10 code B09

Pathogenesis

There are many different viruses that produce morbilliform (measles-like) viral exanthems. Most are not clinically distinct, although some are distinct enough that they can be discussed separately (e.g., roseola, erythema infectiosum). Morbilliform reactions may be produced by viral infections of the host cells or may be due to the host response.

Morbilliform Viral Eruptions

- Adenovirus
- Coxsackie virus
- Erythema infectiosum
- Measles
- Respiratory syncytial virus
- Roseola
- Rubella virus
- West Nile virus (morbilliform eruption in 50%)

Clinical Features

- Viral exanthems most commonly affect infants and children but can affect those at any age, including geriatric patients.
- Viral exanthems are frequently but not always associated with other findings of a viral syndrome, such as a prodrome of malaise and fever or active oral mucosal infection (sore throat, rhinorrhea) or gastrointestinal infection (abdominal pain, diarrhea). Measles is typically associated with coryza, conjunctivitis, and cough.
- The primary lesion—pink to red macules or subtle papules—may vary in size from 1 mm to more than 1 cm.
- Variations include petechial or vesicular lesions.
- Rubella lesions are often rose pink rather than erythematous.
- The distribution is typically generalized and often spares the palms and soles (Figs. 3.7–3.10).
- Patients may be asymptomatic or demonstrate variable pruritus.
- Some patients may also demonstrate malar erythema (so-called slapped cheeks).
- Oral involvement commonly occurs (enanthem).
  - Koplik spots (blue-white spots on an erythematous base) are distinctive lesions, often seen in measles, that appear before the exanthem.
  - Oral ulcerative lesions are common in herpangina.
  - Palatal petechiae are more common in mononucleosis.
- Lymphadenopathy is often present.

Diagnosis

- The differential diagnosis usually also includes a morbilliform drug eruption; the onset of the exanthem needs to be correlated with any new medications. Physical findings that favor a viral rather than a drug cause include the presence of other findings of a viral infection (e.g. prodrome, coryza, diarrhea), the presence of lymphadenopathy, or the presence of an enanthem.
- Acute and convalescent viral serologic studies can be done but are of little help in the acute management of the viral infection, which will have resolved by the time results are available.
- Rubella immunoglobulin G (IgG) antibodies can be determined in 1 day at some institutions by the chemiluminescent immunoassay (ChLIA) on any serum red-top tube.
- A 3 or 4 mm punch biopsy (never a shave biopsy) can be done in atypical cases. However, the findings are consistent with the diagnosis and are not diagnostic by themselves. In most cases, viral and drug morbilliform reactions are histologically identical.

Treatment

- No treatment is required because most cases resolve in 3 to 10 days.
- Weak to moderate-strength topical corticosteroids can be used for pruritic lesions.
- Sedating antihistamines (e.g., diphenhydramine) can be used in patients who are markedly pruritic.

Fig. 3.7. Patient with papular viral exanthema of an unknown viral type affecting the trunk and extremities.

Fig. 3.8. Patient with papular and morbilliform viral exanthema of an unknown viral type, with focal confluence of lesions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 3.9. Patient with papular viral exanthema of an unknown viral type demonstrating confluence on the lateral aspects of the back.

Fig. 3.10. Close-up of the morbilliform lesions in viral exanthem in a child.

Roseola (Infantum; Exanthem Subitum, Sixth Disease) ICD10 code B08.20

Pathogenesis

Roseola is caused by two closely related viruses, human herpesvirus-6 (HHV-6) and human herpesvirus-7 (HHV-7), both of which are tropic viruses for CD4+ (helper) T cells. How this produces a morbilliform reaction is not entirely understood. It is the most common infectious exanthem during the first two years of life.

Clinical Features

- The incubation period from time of exposure to fever is typically 7 to 14 days.
- Roseola typically affects infants and young children, with most cases occurring between the ages of 4 months and 3 years.
- Patients typically have 2 to 5 days of high fever (102–105°F [39–41°C]).
- Despite the high fever, the infants are devoid of other symptoms and appear to be doing surprisingly well, although some patients may have febrile seizures or mild upper respiratory symptoms.
- Lymphadenopathy (usually cervical and occipital) is variably present.
- As the patients defervesce, they develop faint pink to erythematous macules (classically described as rose pink) that are typically 1 to 5 mm in diameter. They most commonly affect the trunk and proximal extremities. Rarely, there is an admixture of macules and subtle papules (Figs. 3.11 and 3.12). The face is only occasionally affected.
- The oral mucosa may also demonstrate red papules of the soft palate and uvula, called *Nagayama spots,* and/or ulcers at the uvulopalatoglossal junction. These typically occur 2 days before the exanthem.

Diagnosis

- The clinical presentation is that of a young infant with high fever, followed by defervescence and a faint morbilliform eruption, which is a clinical pattern, characteristic if not diagnostic.
- Skin biopsies are not specific and are not indicated.
- Specific diagnostic tests (e.g., serologic studies, culture) are currently only available in research facilities, and the results are not generally available until after the infection has resolved.

Treatment

- Supportive therapy includes antipyretics during the febrile phase and hydration, which are all that is needed for most patients.
- Various antiviral therapies, including ganciclovir, foscarnet, and cidofovir, have demonstrated promise but have not been systematically studied and are not indicated at this time.

Clinical Course

The cutaneous eruption may last for hours or up to 3 days.

Fig. 3.11. Faint pink to red macular eruption on the upper chest of an infant. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 3.12. Infant with roseola demonstrating an admixture of macular erythema and subtle erythematous papules. (From the William Weston Collection, Aurora, CO.)

Unilateral Thoracic Exanthem (Asymmetric Periflexural Exanthem of Childhood) ICD10 code B09

Pathogenesis

Unilateral thoracic exanthem is an uncommon but very distinct eruption thought to be due to an unidentified virus. This is supported by occasional cases that have found more than one sibling with the disease and the presence of a viral prodrome in many patients.

Clinical Features

- Most cases occur in the spring months.
- It almost exclusively affects infants and children, with most infections occurring in those between 6 months and 10 years of age.
- About 50% of patients have a viral prodrome consisting of low-grade fever, diarrhea, and/or upper respiratory symptoms.
- The skin lesions begin distinctly with a partial or complete unilateral thoracic distribution of morbilliform (less commonly, papular or eczematous) lesions, with the axillary area being the most common site of initial involvement (Figs. 3.13 and 3.14). Less commonly, it may localize to the proximal extremities (Fig. 3.15).
- As the cutaneous eruption progresses over several days, it typically becomes more bilateral and symmetric.
- The face and palms are always spared.
- Regional lymphadenopathy (usually axillary) is variably present.
- Pruritus may be present or absent.

Diagnosis

- The clinical presentation of a predominantly unilateral truncal (or, less commonly, proximal extremity) exanthem in a child is essentially diagnostic. The frequent involvement of the axillary area is a useful clinical clue.
- A biopsy is not typically indicated. If done, it should be a 3 or 4 mm punch biopsy that will at most be consistent with the diagnosis but not specific.

Treatment

- No treatment is an option in asymptomatic patients.
- Mild topical corticosteroids (e.g., hydrocortisone, desonide) can be used for pruritic lesions, although there is no evidence to suggest that this shortens the course of the disease.

Clinical Course

The exanthem typically disappears within 2 to 6 weeks.

Fig. 3.13. Unilateral thoracic exanthem. This is a dramatic example of morbilliform lesions in a boy. (Courtesy Dr. Gavin Powell.)

Fig. 3.14. Left side of chest of a child demonstrating subtle macular lesions.

Fig. 3.15. Less commonly, the eruption involves an extremity. Note some extension to the contralateral lower extremity.

Measles (Rubeola) ICD10 codes B05.0 to B05.9 (depending on complications)

Pathogenesis

Measles is an infection caused by the *Morbillivirus* genus of viruses, which is an RNA virus belonging to the Paramyxoviridae family. Measles is acquired through the upper respiratory tract. It is highly infectious, with some studies demonstrating that up to 90% of susceptible individuals living in the same home will acquire the infection. Indigenous measles in the United States has been essentially eliminated; however, miniepidemics continue to occur because of cases imported from other countries.

Measles and Vaccination

Although measles was declared to be eliminated in the United States in 2000, it remains a global problem, and new cases continue to be imported into the United States. In 2014, the Centers for Disease Control and Prevention (CDC) documented 667 new cases. Worldwide, there are about 20,000,000 new cases every year. In 2015, there was a highly publicized outbreak in Disneyland, with 147 documented cases.

Measles will continue to be an issue because more than 12% of children (>8 million children) are either not vaccinated or incompletely vaccinated.

Clinical Features

- The incubation period is 4 to 12 days.
- Patients can transmit the disease up to 5 days after the morbilliform eruption appears.
- Symptoms include fever up to 104°F (40°C).
- The morbilliform eruption begins several days after the onset of the fever and is typically generalized, maculopapular, and often pruritic (Fig. 3.16).
- Mucosal findings include ***c***onjunctivitis, ***c***oryza, and ***c***ough (the three Cs of measles) in addition to Koplik spots (Fig. 3.17).
- The maculopapular lesions often become brown as they resolve (Fig. 3.18).
- Complications include pneumonia, encephalitis, and, rarely, death (1/1000 cases). Worldwide, approximately 134,200 (2015) individuals still die every year from measles.

Diagnosis

- Laboratory studies include the demonstration of IgM antibodies in serum or isolation of the measles virus RNA from the respiratory system.
- If the patient has previously been vaccinated, or the patient is a vaccine failure, IgM antibodies may not be detectable. In this scenario, the diagnosis can still be established by isolation of the measles virus RNA from respiratory secretions or by demonstrating increased IgG antibody levels.
- Exposure to a patient known to have measles is strong epidemiologic evidence.

Treatment

- This includes hydration and paracetamol or ibuprofen for the management of fever.
- Measles may be prevented by ensuring that children are immunized against measles with the MMR vaccine, which covers measles, mumps, and rubella.

Clinical Course

The fever typically lasts about 1 week, and the skin lesions resolve over a period of 7 to 9 days. Most cases are benign; however, a fatal outcome occurs in about 0.2% of cases. Worldwide, there were still 15 deaths every hour from measles.

Fig. 3.16. Measles—conjunctivitis and macular eruption of the face. (From the William Weston Collection, Aurora, CO.)

Fig. 3.17. Koplik spots. Shown are three characteristic whitish spots surrounded by a rim of erythema. These are most common on the buccal mucosa.

Fig. 3.18. Patient with morbilliform lesions on the abdomen, with a slightly brownish color. (From the William Weston Collection, Aurora, CO.)

Rubella (German Measles) ICD10 code B06.9

The name *rubella* is derived from the Latin word *rubellus,* meaning reddish. It is also known as German measles or 3-day measles. It is usually called German measles because it was first described in the German medical literature in 1814. Rubella is produced by a togavirus belonging to the genus *Rubivirus.* The virus enters the body through the upper respiratory tract and primarily replicates in the nasopharynx and regional lymph nodes before entering the viremic phase. The use of rubella vaccination has almost eliminated rubella in the United States. In the 1964–1965 epidemic, there were an estimated 12.5 million cases; however, between 2005 and 2011, there were an average of only 11 cases/year. Most reported cases in the United States occur in nonimmunized foreign born Hispanic adults.

Clinical Features

- The incubation period is typically about 2 weeks (range, 12–23 days; mean, 18 days).
- A prodrome of low-grade fever (usually <100.4°F [38°C]) is often seen in adults but is often absent in children.
- Mucosal manifestations include conjunctivitis and Forchheimer sign (≈20% of cases), which consists of small red papules localized to the soft palate.
- Variable lymphadenopathy is present before the onset of the morbilliform eruption and persists after the eruption has faded.
- Cutaneous manifestations include a discrete morbilliform eruption that initially appears on the face (Fig. 3.19) and then spreads to the trunk and extremities (Fig. 3.20). The macules are typically less red and pinker than those seen in measles, but there is considerable overlap.
- The macules of rubella do not typically coalesce, except on the cheeks in some cases.
- Some patients may also demonstrate dry skin.
- Extracutaneous manifestations include arthralgia and arthritis (particularly in adults), eye pain, sore throat, headache, cough, and chills.
- Complications are rare but include encephalitis (1/6000 cases), orchitis, hemorrhagic lesions in the skin and internal organs, and neuritis.
- During the first 20 weeks of pregnancy, pregnant patients are at risk for **congenital rubella syndrome,** which consists of numerous congenital defects, including fetal death, blindness, and mental retardation.

Diagnosis

- If lymphadenopathy is found in someone who has not had the MMR vaccination, the clinical presentation of a morbilliform eruption should raise the suspicion of rubella.
- A viral culture is usually done from the nasopharynx, but cultures from the blood, urine, and cerebrospinal fluid can also be used. However, very few laboratories perform this test. Details on how to perform it can be found at https://www.cdc.gov/rubella/lab/serology.html.
- Ideally, serologic studies should be done as early as possible and carried out again 2 to 3 weeks later to confirm acute and convalescent titer levels.

Treatment

- This includes hydration and paracetamol or ibuprofen for the management of fever.
- This may be prevented by ensuring that children are immunized against measles with the MMR vaccine, which covers measles, mumps, and rubella.

Clinical Course

Cutaneous manifestations are short lived—hence the name *3-day measles.* However, the duration can vary from 1 to 5 days.

Fig. 3.19. Rubella. Shown are faint, pinkish-red macules on the face and trunk of an infant. (From the William Weston Collection, Aurora, CO.)

Fig. 3.20. Patient with rubella. This is a close-up of faint, pinkish-red macules of the trunk and proximal upper arm. (From the William Weston Collection, Aurora, CO.)

Roseola Vaccinatum ICD10 code T88.1

Pathogenesis

The term *roseola vaccinatum* (benign hypersensitivity reaction to smallpox vaccine) is used here as a universal term to describe patients receiving smallpox vaccination who develop a hypersensitivity reaction. Although the most common presentation is a morbilliform eruption, in some cases it may resemble urticaria or erythema multiforme. This reaction is included here because of the 2002 initiative by the US government to restart mass smallpox vaccinations of active duty military personnel. Between 2002 and 2014, 2.4 million service members and other personnel were vaccinated. There are four known different formulations of the live virus vaccine, and all produce these reactions. The vaccinations now continue in a more limited fashion. In a study of more than 16,000 soldiers at one military base, the incidence for the erythematous (morbilliform) reaction was 0.054%, with an urticarial reaction occurring in 0.018% and erythema multiforme–like reactions occurring in 0.009%.

Clinical Features

- Typically, the patient is a young adult in the military, because most of the patients receiving the vaccines are on active duty.
- Eruptions typically develop 7 to 11 days after vaccination.
- Morbilliform reactions may surround and be accentuated around the vaccination site (Figs. 3.21–3.23).
- Morbilliform lesions vary from small erythematous maculopapular lesions to large confluent areas of erythema, with the upper extremities and trunk being most severely affected.
- Urticarial lesions typically resemble urticaria, although they often persist longer than 24 hours at the same spot.
- Erythema multiforme–like lesions usually demonstrate an annular red margin associated with a dusky center. The classic targetoid lesions with central blisters are not present.

Diagnosis

- The diagnosis is established by the history of a smallpox vaccination being given to the patient within the last 7 to 11 days. The accentuation of the reaction around the vaccination site, which will typically be crusted at this stage, is characteristic.
- Viral cultures are not needed because these represent hypersensitivity reactions, and no virus is present in the lesional areas.
- A 3.4-mm punch biopsy can be done to exclude other possibilities (e.g., erythema multiforme). However, the histologic findings are not diagnostic and are generally only consistent with roseola vaccinatum.

Treatment

- No treatment is an option because these are self-limited reactions that resolve spontaneously.
- Patients who are pruritic can be treated with topical emollients and topical anesthetic agents, such as pramoxine.
- Patients with an urticarial tissue reaction can be treated with oral antihistamines.

Clinical Course

The cutaneous lesions typically resolve without sequelae over 3 to 7 days.

The Monster in the Freezer

Why does the military still vaccinate against smallpox when it has been eradicated? In theory, the live *Variola* virus only exists in one secure laboratory in the United States (the CDC) and a similar secure one in Russia (VECTOR). However, it is highly likely that not all the virus is confined to these sites. In 2014, six apparently lost vials of the virus were found in a cold storage unit in a US Food and Drug Administration laboratory, and there have been a number of controversial reports of vials of live smallpox virus at one (or more) Russian military bases. There is also concern that live virus might have found its way into North Korea.

Of all the known biologic agents, smallpox is the most wildly infectious and easily aerosolized; it has a mortality rate of about 30% in those who are not immunized.

Fig. 3.21. Patient with roseola vaccinatum demonstrating marked erythema surrounding the vaccination site and a morbilliform reaction.

Fig. 3.22. This figure demonstrates a severe reaction around the vaccination site. (From the Walter Reed Army Medical Center Collection, Washington, DC.)

Fig. 3.23. Patient with morbilliform morphology of roseola vaccinatum. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Rickettsial Infections ICD10 code A79.9 (rickettsial infection, not specified)

Rickettsial Infections (Partial List)

Typhus Group

- Epidemic typhus *(Rickettsia prowazekii)*
- Murine typhus *(Rickettsia typhi)*
- Scrub typhus *(Orientia tsutsugamushi)*

Spotted Fever Group

- Rocky mountain spotted fever *(Rickettsia rickettsii)*
- Boutonneuse fever *(Rickettsia conorii)*
- Rickettsialpox *(Rickettsia akari)*

Pathogenesis

Rickettsial diseases are the result of infection by obligate intracellular bacteria transmitted to humans by arthropod vectors, including ticks, lice, chiggers, mites, and other species. The bacteria primarily but not exclusively attack endothelial cells and produce a morbilliform eruption that mimics viral and drug morbilliform eruptions. In some infections, the vascular damage is more severe, resulting in hemorrhagic lesions or ulcers. There are numerous species in the genus; however, the infections are usually broken up into the typhus and spotted fever groups.

Important Clues

- Morbilliform eruption plus fever. Always consider rickettsial infection, especially if there is a history of foreign travel.
- Morbilliform eruption plus fever plus necrotic papule (eschar at the tick bite site). This classic triad is seen in a specific subset of rickettsial infections, such as rickettsialpox, boutonneuse fever, African tick bite fever, Queensland tick typhus, and others.
- Morbilliform eruption that starts to become purpuric plus fever. This combination is suspicious for Rocky Mountain spotted fever (see Chapter 20).

Clinical Features

- Following the arthropod introduction of the rickettsial organisms, the incubation period is usually 5 to 17 days but can be as short as 2 days and as long as 24 days.
- The classic triad of rickettsial infections is fever, headache, and rash.
- The morbilliform eruption is not specific and consistent with erythematous macules, with some lesions being more papular (Figs. 3.24 and 3.25).
- Many of the rickettsial infections will demonstrate an eschar (Fig. 3.26) at the bite site (tache noir).

Diagnosis

- The appearance of cutaneous rickettial infection is not specific; however, a constellation of findings from the history, arthropod exposure, and clinical presentation may suggest the diagnosis.
- Serologic studies include testing of acute and convalescent sera.

Treatment

- Doxycycline is the treatment of choice for suspected or confirmed rickettsial infections in adults and children.
- Chloramphenicol is an alternative choice if doxycycline is contraindicated.

Comment

In suspected cases, patients should be treated empirically. The CDC Rickettsial Zoonoses Branch (Tel. +001-404-639-1075) is an invaluable resource.

Fig. 3.24. Patient with boutonneuse fever demonstrating morbilliform eruption of the trunk. The infection was acquired from a tick bite in southern Europe. (From the Walter Reed Army Medical Center Collection, Washington, DC.)

Fig. 3.25. Close-up of the morbilliform eruption in the same patient as in Fig. 3.24.

Fig. 3.26. Necrotic papule at the tick bite site in a different patient with boutonneuse fever. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 4
Diffuse or Reticulated Erythema

Key Term
Mucocutaneous lymph node syndrome

Erythema is defined as cutaneous diseases that present with large patches of red skin, without overlying changes in the epidermis. Included in this group are disorders that have a netlike or reticulated pattern of redness. Notably absent in this pattern are blisters, targetoid lesions, scale, or erythema that is photodistributed. As one would expect, as the lesions age, they may become scaly or peel. A classic example of this is a first-degree sunburn in which there is erythema confined to the site of sun exposure, with no primary epidermal changes that can be seen grossly. However, as the erythema resolves, the skin becomes scaly or even peels in sheets. Photodistributed erythema is discussed in Chapter 19.

Differential Diagnosis of Erythema

Nonphotodistributed
- Erythema infectiosum
- Kawasaki disease
- Rosacea
- Scarlet fever
- Toxic shock syndrome

Photodistributed (see Chapter 19)
- Dermatomyositis
- Lupus erythematosus
- Phototoxic drug eruptions
- Sunburn

Reticulated Erythemas
- Erythema infectiosum
- Erythema ab igne

IMPORTANT HISTORY QUESTIONS

How long has your redness been present?

Most causes of erythema are of recent duration because many, but not all of them, are due to a bacterial or viral toxin or a medication.

Have you started any new medications in the last 10 days?

This is a critical question because some erythemas may be drug-induced. The classic example would be doxycycline, which produces a photodistributed erythema.

Have you had any fever?

This question is directed toward determining a potential infectious cause, such as a viral or bacterial infection.

Do you have any other medical problems?

This question can elicit much important clinical information, including a history of a connective tissue disorder or history of rosacea.

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the lesions?

Although not discussed in this chapter, some erythemas are photodistributed, including dermatomyositis, lupus erythematosus, phototoxic drug eruptions, and sunburn. Other erythemas, such as chemotherapy-induced acral erythema, demonstrate a predominantly acral distribution, and erythema secondary to rosacea is usually confined to the face.

Are lesions present in the oral mucosa?

Erythema associated with mucosal lesions are more likely to be due to infections, lupus erythematosus, or drug eruptions.

Are vesicles or blisters present?

Although a so-called pure erythema should not demonstrate blisters, some severe erythemas may at some time in their development develop vesicles or blisters. For example, a severe sunburn (second-degree sunburn) may develop blistering, which may be very focal, and although most cytoxic chemotherapy reactions present as erythema, severe reactions can develop focal blister formation.

Presence or absence of lesions with a reticulated (netlike) appearance

Although most variants of erythema do not demonstrate a reticulated appearance, some erythemas, including erythema infectiosum and erythema ab igne, frequently demonstrate a reticulated appearance.

Scarlet Fever ICD10 code A38

Pathogenesis

Scarlet fever (scarlatina) is a toxic reaction to toxins (erythrogenic toxins A, B, and C) produced by group A β-hemolytic streptococci *(Streptococcus pyogenes).* Once patients acquire antibodies against these toxins, scarlet fever does not develop. This accounts for why most patients affected are children between the ages of 1 to 10 years, because they are less likely to have these antibodies. In the antibiotic era, scarlet fever has become much less common than it was formerly.

Clinical Features

- Scarlet fever typically affects infants and children between the ages of 1 and 10 years.
- Most patients have streptococcal pharyngitis, with symptoms that include sore throat, headache, fever (102–105° F [39–40.5°C]), malaise, or tonsillitis and, less commonly, streptococcal wound or pelvic infections.
- Erythema typically begins 12 to 48 hours after the development of the primary infection.
- Erythema most commonly begins on the neck, chest, and axillae, with rapid spread to the remainder of the body (Fig. 4.1).
- On the face, there is marked erythema, with a slapped cheek appearance and circumoral pallor.
- Punctate erythematous papules rapidly develop on areas with erythema, typically described as sunburn with goose bumps (Fig. 4.2).
- Linear petechial streaks may be seen in the flexures (e.g., axillae, antecubital, inguinal).
- Patients may demonstrate a positive Rumpel-Leede tourniquet test result.
- The tongue is initially white with prominent papillae, but as the illness progresses, the entire tongue becomes red, with prominent papillae classically described as a red strawberry tongue (Fig. 4.3).
- Rarely, clusters of small vesicles may appear on the trunk and/or extremities.
- Desquamation that is most prominent on the hands and feet typically begins 7 to 10 days later.

Diagnosis

- The clinical presentation of a child with pharyngitis or tonsillitis and systemic symptoms, which include fever and rapidly spreading erythema, should initially suggest the diagnosis. As the disease progresses, numerous physical findings further support the diagnosis.
- The complete blood count (CBC) reveals a leukocytosis with a left shift (~85%–95% polymorphonuclear leukocytes).
- A throat culture should be done.
- The antistreptolysin O (ASO) titer or streptozyme level is typically elevated.

Treatment

- Oral penicillin VK or oral erythromycin for 10 days is the treatment of choice.

Clinical Course

- In the preantibiotic era, this disease often resulted in a fatal outcome (≈3%–20%). Complications of scarlet fever include acute glomerulonephritis and rheumatic fever (2%–3% of patients). With recognition and antibiotic treatment, the mortality rate is less than 1%. It is important to note that patients may continue to desquamate for as long as 6 weeks.

Fig. 4.1. Scarlet fever. Shown here is marked diffuse erythema of the neck, upper chest, and arms. Note early desquamation of the neck. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 4.2. Punctate papules on a background of erythema, a pattern known as sunburn with goose bumps. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 4.3. Strawberry tongue in a patient with scarlet fever. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Toxic Shock Syndrome ICD10 code A48.3

Pathogenesis

Toxic shock syndrome (TSS) is a rare complication of infection by strains of *Staphylococcus aureus* that produce TSS toxin-1 (TSST-1). Less commonly a similar disorder, sometimes referred to as toxic shock–like syndrome (TSLS), is produced by a streptococcal pyrogenic exotoxin produced by strains of *Streptococcus pyogenes*. In the 1980s, there was an epidemic associated with superabsorbent tampons. Since the withdrawal of these products, the number of reported cases has decreased. The source of the infection can still be a tampon; however, it also can be produced by infections of other mucosal and cutaneous sites.

Clinical Features

- See diagnostic criteria below.

Diagnosis

- The 2011 Centers for Disease Control and Prevention (CDC) criteria for the diagnosis of TSS (http://www.cdc.gov/nndss/conditions/toxic-shock-syndrome-other-than-streptococcal/case-definition/2011) include the following (six criteria are needed for confirmed infection and five criteria are needed for presumed infection; see the CDC site for more information):
  - Body temperature ≥ 38.9°C (102°F)
  - Hypotension with systolic blood pressure ≤ 90 mm Hg
  - Diffuse macular-patchy erythema, with nonspecific cutaneous findings (Figs. 4.4 and 4.5)
  - Evidence of involvement of three or more organ systems:
    - Gastrointestinal tract—vomiting or diarrhea
    - Muscular system—severe myalgia or more than twice the creatine phosphokinase level
    - Mucous membrane hyperemia—vaginal, oral, conjunctival (Fig. 4.6)
    - Kidney failure—creatinine level more than twice normal
    - Liver inflammation—bilirubin, aspartate aminotransferase (AST), or alanine aminotransferase (ALT) level of twice the normal level or higher
    - Low platelet count, <100,000/mm^3
    - Central nervous system—confusion without focal neurologic findings
  - Negative workup up for other potential causes, including other bacterial infections and negative serologic studies for rickettsial infection, leptospirosis, and measles
  - Desquamation (usually of the palms and soles)—typically 1 to 2 weeks after the onset (Fig. 4.7). Note that this criteria does not help in the evaluation of patients in the early stages of the disease.
- Mucocutaneous findings that should suggest the possibility of this diagnosis include conjunctival erythema (in addition to toxic shock syndrome, this finding can be seen in leptospirosis, Colorado tick fever, Kawasaki disease, Rocky Mountain spotted fever, and some viral syndromes) and edema of the hands and feet.

Treatment

- The patient should be hospitalized, with consideration for admission into an intensive care unit for supportive care (e.g., fluid management, management of renal disease).
- Remove the source of infection, including removal of tampons and draining abscesses, if present.
- Antibiotic treatment should cover *S. aureus* and *S. pyogenes,* typically penicillins, cephalosporins, or vancomycin, with consideration for the addition of clindamycin or gentamycin.

Clinical Course

Patients with TSS may progress rapidly, and there is urgency in establishing a presumptive diagnosis, because the mortality rate ranges from 5% to 15%. Patients with TSS may also develop a recurrence of their disease with a subsequent infection.

Fig. 4.4. Woman with culture-positive *S. aureus* infection of the groin and marked erythema extending to the thigh and abdomen. The patient's tampon was also culture-positive.

Fig. 4.5. Marked erythema of the same patient in Fig. 4.4 involving the breast and abdomen. This erythema also extended into the axillae.

Fig. 4.6. Same patient as in Fig. 4.4, with mild conjunctival hyperemia. The patient also had involvement of the oral pharynx in addition to fever (104.3°F [40.2 °C]), profound hypotension (80/20 mm Hg), vomiting, low platelet count, renal failure, and abnormal liver enzymes.

Fig. 4.7. Desquamation of the fingertips 1 week later in the same patient as in Fig. 4.4. (Tripler Army Medical Center, Honolulu, HI.)

Kawasaki Disease ICD10 code M30.3

Pathogenesis

Kawasaki disease, also known as **mucocutaneous lymph node syndrome,** is a disease of unknown cause that is presumed to be due to an unknown toxin or antigenic substance.

Diagnosis of Kawasaki Disease

- Five days of fever (required), plus four of the five remaining criteria:
  - Oropharyngeal changes to include erythema, strawberry tongue, or cracking or fissuring of the lips
  - Bilateral nonpurulent conjunctivitis
  - Erythema of skin that does not vesiculate
  - Erythema or swelling of the hands or feet
  - Cervical lymphadenopathy (≥1.5 cm)

Clinical Features

- It typically affects children (frequently of Asian descent) between the ages of 3 months and 10 years, with most cases occurring in children younger than 5 years.
- It is more common in the winter.
- The patient has had a fever (>39°C [102°F]) of more than 5 days' duration that is not responsive to antibiotics.
- Mucosal changes include bilateral nonpurulent conjunctivitis, oral erythema, strawberry tongue, and fissured tongue (Figs. 4.8 and 4.9).
- Nonsuppurative cervical lymphadenopathy is present in most but not all cases.
- The hands and feet typically demonstrate variable edema and palmoplantar erythema, which frequently desquamates (Fig. 4.10).
- The cutaneous changes of the trunk are nonspecific. They consist of variable erythema that may be morbilliform, scarlatiniform, or erythema multiforme–like in appearance (Fig. 4.11).
- Variable features include irritability, arthralgias, and tachycardia.
- Complications include vasculitic changes that can lead to coronary artery aneurysms, with up to 18% of children developing coronary involvement and rare cases being fatal (<1%).

Diagnosis

- The diagnosis is established by the criteria listed above—namely, fever of 5 days' duration, plus four of the five remaining criteria. Some clinicians establish a presumptive diagnosis after only 3 days of fever if all the other criteria are met.
- If a coronary artery disease or aneurysm is detected, a presumptive diagnosis can be made, even if all the necessary criteria are present.
- Laboratory tests that may be abnormal include an elevated erythrocyte sedimentation rate (ESR), elevated C-reactive protein (CRP) level, normocytic anemia, sterile pyuria, and liver function studies.
- Cardiac abnormalities may be demonstrated by an abnormal electrocardiogram (e.g., arrhythmia, ventricular dysfunction), echocardiogram (e.g., aneurysm or more subtle changes), or coronary angiogram.

Treatment

- Hospitalization is recommended in all cases.
- The standard of care treatment is intravenous immunoglobulin (IVIG), with most patients improving in 24 hours.
- Aspirin is usually begun immediately and then slowly tapered as the fever resolves.
- Corticosteroids were formerly used, but the failure to show benefit in a randomized controlled trial has diminished their popularity, although they are still occasionally added to IVIG and aspirin in severe cases.

Clinical Course

Most patients quickly respond to therapy, and the mortality rate is well under 1%.

Fig. 4.8. Facial erythema, conjunctivitis, and fissured lips in a patient with Kawasaki disease. (From the William Weston Collection, Aurora, CO.)

Fig. 4.9. Strawberry tongue and fissured lips in a patient with Kawasaki disease. (From the William Weston Collection, Aurora, CO.)

Fig. 4.10. Marked erythema and edema of the hands in a child with Kawasaki disease.

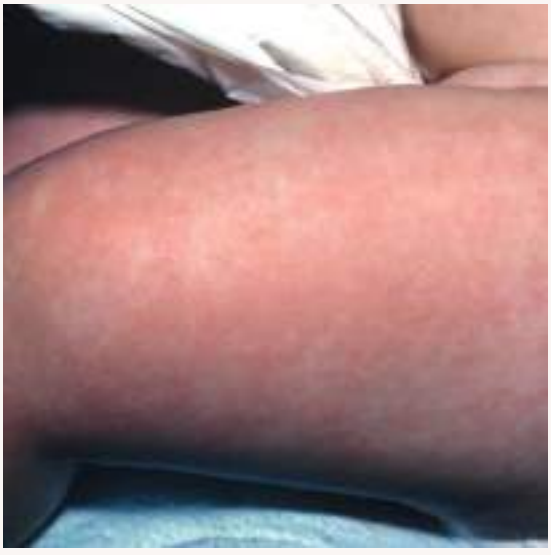

Fig. 4.11. Large patches of erythema on the upper thigh of a young child with Kawasaki disease. (From the William Weston Collection, Aurora, CO.)

Erythema Infectiosum ICD10 code B08.3

Pathogenesis

Erythema infectiosum is due to infection by the human parvovirus B19 (B19V). The virus is found in the respiratory secretions and spread by aerosolization.

Clinical Features

- Based on inoculation studies of volunteers, the incubation period from the time of exposure to the prodrome is 6 days, with another 10 to 14 days needed for the onset of the cutaneous eruption. Some patients may not experience a prodrome.
- There is a variable prodrome of fever, chills, myalgias, sore throat, and gastrointestinal symptoms. It is generally more severe in adults and may include symmetric polyarthritis of the peripheral joints—hands, feet, wrists, knees.
- The facial exanthem consists of erythema that is most pronounced on malar areas (so-called slapped cheeks); this usually appears first (Fig. 4.12A).
- Truncal and extremity lesions initially consist of erythematous macules that may eventually connect to form a reticulated or netlike appearance (Fig. 4.12B). This exanthem may come and go.
- Less commonly, presentations include annular lesions, hemorrhagic macules, and confluent erythema.
- Patients may be pruritic during the prodromal phase and occasionally demonstrate mild pruritus associated with the exanthem.

Diagnosis

- The clinical presentation is usually all that is required to make a presumptive diagnosis.
- A CBC may demonstrate neutropenia, lymphocytopenia, or thrombocytopenia.
- Skin biopsies are not specific and are not indicated, although some laboratories have stains directed against HPV B19 and can demonstrate viral antigens in tissue.
- Specific diagnostic testing is available in many areas. It consists of the detection of immunoglobulin G (IgM) anti-HPV B19 antibodies in the early phase (by week 2 after inoculation) and the development of IgG anti-HPV B19 antibodies later in the course of the illness (several weeks into the infection).

Treatment

- Supportive therapy includes antipyretics as needed during the prodromal phase.
- No specific treatment of the exanthem is needed; antihistamines can be used in patients complaining of pruritus.

Clinical Course

The facial erythema typically lasts for 1 to 5 days and then disappears, whereas the reticulated erythema may last for days to months. The reticulated erythema frequently disappears and then reappears with anything that flushes the skin (e.g., fever, exercise, sunlight exposure). The arthralgias and arthritis may be short lived or persist for years in adults. Rare patients may develop a transient aplastic crisis. It is important to note that pregnant women may pass the virus to the fetus, resulting in fetal hydrops, but this is uncommon.

Fig. 4.12A. Young girl with characteristic diffuse bilateral edema of the face (slapped cheek appearance). (Courtesy Dr. Amanda Tauscher.)

Fig. 4.12B. Same patient as in Fig. 4.12A with areas of diffuse and reticulated erythema of the arm. (Courtesy Dr. Amanda Tauscher.)

Erythema Ab Igne ICD10 code L59.0

Pathogenesis

Erythema ab igne results from the skin being chronically or repeatedly exposed to mild to moderate heat (typically, 43–47°C [109–117°F]). Formerly, this was most commonly seen on the anterior legs of women who were exposed to chronic heat from sitting in front of hearths or heating stoves. In recent years, the most common causes are heating pads, heating blankets, heated car seats, and hot water bottles, although laptop exposure on the anterior aspect of the thighs has become increasingly common. It can also be an occupational hazard in jobs requiring repeated exposure to high heat, such as bakers, cooks, smelters, glassblowers, and jewelers.

Clinical Features

- During the very acute phase, the earliest lesions are transient patches of reticular erythema.
- With continued exposure, the reticular erythema becomes increasingly fixed and will eventually not resolve (Figs. 4.13 and 4.14).
- Mature lesions demonstrate tan to brown reticulated patches (Fig. 4.15).
- Very rarely, patients have demonstrated reticulated blistering.
- Symptoms may be absent or present, with variable itching and burning.
- Complications with continued exposure to the heat source include actinic keratoses and squamous cell carcinoma. In most cases, this requires decades of exposure.

Treatment

- The cornerstone of treatment is removal of the heat source that is inducing the reaction. There is no specific treatment of the skin changes once they develop.

Clinical Course

Following removal of the heat source, most cases demonstrate gradual resolution over a period of 1 month to several months.

Fig. 4.13. Patient with acute erythema ab igne demonstrating a dramatic reticular erythema of the back. This was due to sleeping on a heated blanket. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 4.14. Patient with acute erythema ab igne of the breast from an electric heating pad. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 4.15. Patient with chronic erythema ab igne of the lower back from an electric heating pad. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 5
Urticarial and Indurated Eruptions

Urticarial eruptions yield, as a primary lesion, a wheal (hivelike) or something that resembles a wheal, creating a fixed indurated papule or plaque, without scale. This pattern may be produced by internal and external causes. Most lesions are erythematous (red).

IMPORTANT HISTORY QUESTIONS FOR URTICARIAL ERUPTIONS

How long have you had these lesions?

Attempt to establish the duration of illness. Some urticarial processes are acute (e.g., acute urticaria, Sweet syndrome), whereas others are present for weeks, months, or even years (e.g., chronic urticaria).

How long do individual lesions last?

In simple urticaria (hives), the individual lesions lasts less than 24 hours, although the rash may last longer. This differs from urticarial vasculitis, in which individual lesions last longer than 24 hours. As a separate question, it is important to query the patient about how long individual lesions last, distinct from how long the overall condition has been present. This information is often overlooked in emergency department (ED) and urgent care settings.

What medications do you take?

Most urticarial eruptions represent a hypersensitivity process. These conditions, including urticaria, angioedema, serum sickness, and Sweet syndrome, may be induced by drugs.

Do the lesions itch or are they painful?

Simple urticaria (hives) is usually pruritic, whereas urticarial vasculitis, Sweet syndrome, cellulitis, and especially necrotizing fasciitis may be described as burning or painful.

Have you had any difficulty breathing?

This is a critical question to ask and document in the medical record. Sinopulmonary involvement distinguishes angioedema and anaphylaxis from simple urticaria, which is without mucosal or sinopulmonary involvement.

IMPORTANT PHYSICAL FINDINGS FOR URTICARIAL ERUPTIONS

Are any of the lesions annular?

Some urticarial eruptions may be annular, or vaguely annular, and this is an important pattern to observe. Simple urticaria (hives) may present with annular and nonannular lesions.

Are any of the lesions linear?

Linear lesions suggest dermatographism, which can be tested by stroking the skin with a firm object and waiting 3 to 6 minutes to identify an erythematous line. The line should disappear in 15 to 30 minutes.

Do any of the lesions demonstrate focal hemorrhage?

Simple urticaria does not demonstrate associated hemorrhage unless the hemorrhage is simply due to increased hydrostatic pressure in the lower extremities. Urticarial vasculitis and hemorrhagic edema of infancy often demonstrate associated hemorrhage.

How large are the lesions?

Small papular wheals (1–4 mm) often suggests cholinergic urticaria, which is related to heat or sweating.

What is the distribution of the lesions?

Some forms of physical urticaria may demonstrate a distinct distribution. For example, solar urticaria is photoaccentuated, whereas pressure urticaria occurs in areas of pressure, such as the hands, feet, trunk, buttocks, and legs.

Is any fever present?

A fever should prompt consideration of an infectious cause of urticaria (e.g., reaction to streptococcal pharyngitis or a viral infection). Also, some mimics of urticaria may be caused by infection, such as erythema migrans, the cutaneous manifestation of Lyme disease.

Drugs Often Implicated in Iatrogenic Urticaria
- Ampicillin
- Amoxicillin
- Penicillin
- Sulfonamides

Pathogenesis

Urticaria (hives) is ubiquitous, with about 20% of the world's population experiencing at least one episode of urticaria in a lifetime. A cause is identified in about 50% of cases of acute urticaria (<6 weeks' duration). Common instigators include food (e.g., seafood, nuts), wasp and bee stings, blood products, viral infections, radiocontrast media, and drugs. It is believed that many cases of chronic urticaria (>6 weeks) are due to autoantibodies directed against the high-affinity immunoglobulin E (IgE) receptor and/or IgE itself. Hence, even extensive and detailed patient workups in chronic urticaria often fail to demonstrate a cause.

Clinical Features

- Acute urticaria (<6 weeks' duration)—pruritic wheals, of variable size, which may be annular. Although the condition may last for a prolonged duration, individual lesions last less than 24 hours (Figs. 5.1–5.3).
- Chronic urticaria (>6 weeks' duration, with nearly daily eruptions)—a cause is less often identified.

Diagnosis

- A drug exposure history is critical. Most causative drugs were initiated in the last 8 to 14 days, but occasionally an eruption may be caused by a drug used for a longer period. The query should include also drugs used on an occasional basis, as well as any vitamins or supplements that the patient may have taken.
- Skin biopsies are not usually diagnostic but may exclude other disorders. The findings may suggest urticaria or another hypersensitivity process. Moreover, a biopsy does not discriminate among different causes of urticaria (e.g., drug-induced, pressure-induced, cholinergic urticaria).
- Sometimes, direct immunofluorescent studies may be useful to exclude urticarial vasculitis.
- Blind laboratory evaluations are usually not helpful. Laboratory studies are more significant when directed by a pertinent medical history, review of systems, or physical examination. Studies may include a complete blood count (CBC), erythrocyte sedimentation rate (ESR), thyroid antibodies (present in ~25% of patients with chronic urticaria), determination of cryoglobulin levels, and tests for hepatitis B, hepatitis C, and antinuclear antibody (ANA) and extractable nuclear antigen antibodies (ENA) (connective tissue disease can be associated with urticaria).

Treatment

- Acute urticaria
  - Discontinue potentially offending medications when possible.
  - Classic histamine-1 (H1) nonsedating antihistamines represent first-line therapy; the most common treatments are cetirizine, fexofenadine, loratadine, and desloratadine.
  - Patients who fail nonsedating antihistamines might consider a sedating antihistamine in the evening (e.g., hydroxyzine, diphenhydramine).
  - For patients failing H_1 antihistamines, an H2 antagonist (e.g., cimetidine, ranitidine) may be added.
  - Oral prednisone may be used for severe cases. A typical adult dose is 40 mg/day for 3 days, tapering to 20 mg/day for 3 days and then 10 mg/day for 3 days.
- Chronic urticaria
  - Classic H1 antihistamines (as above)
  - Doxepin (potent H1 and H2 receptor antagonist)—typical doses are 10 to 30 mg at night.
  - Leukotriene inhibitors (zafirlukast, montelukast sodium)—anecdotal success
  - Omalizumab is a monoclonal antibody that inhibits IgE binding to high-affinity IgE receptors on mast cells.

Strongest Antihistamine?

Studies comparing inhibition of the wheal and flare response of injected histamine have demonstrated that of the nonsedating antihistamines such as cetirizine is more effective than terfenadine, epinastine, ebastine, fexofenadine, and loratadine. Despite the evidence provided by the experimental model, the clinical relevance of the findings was challenged.

Note that the term *nonsedating* is not always accurate, because some patients will note variable sedation with these drugs. The weaker sedation observed in this class of drugs is due to lowered crossing of the blood-brain barrier, at least relative to classic sedating antihistamines.

Fig. 5.1. Acute urticaria in a child from an unknown cause. Some lesions maintain an annular appearance. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 5.2. Large lesion of urticaria demonstrating a dimpled appearance due to dermal edema *(peau d'orange).*

Fig. 5.3. Patient with acute urticaria of the palm from an unknown cause. The location suggests possible pressure urticaria. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Physical Urticarias ICD10 Code (dependent on subtype; see below)

The Physical Urticarias
- Aquagenic urticaria: L50.8
- Cholinergic urticaria: L50.5
- Cold urticaria: L50.2
- Dermatographism: L50.3
- Pressure urticaria: L50.8
- Solar urticaria: L50.8
- Vibratory urticaria: L50.6

Pathogenesis

In physical urticarias (see box), the wheal and flare response is a result of cutaneous physical stimuli (e.g., pressure, heat, cold). Physical urticaria accounts for about 15% to 20% of all cases. Dermatographism and cholinergic urticaria are the most common physical urticarias.

Clinical Features

- Clinical features depend on the type of physical urticaria:
  - Aquagenic urticaria is a rare variant confined to sites of water exposure.
  - Cholinergic urticaria is relatively common and is caused by heat and sweating. It results in small (1- to 4-mm) papules on the trunk and proximal extremities (Fig. 5.4). Patients often report that the condition is precipitated by warm showers, exercise, and emotional stress.
  - Cold urticaria is an uncommon variant caused by cold exposure (Fig. 5.5). In some cases, angioedema may be associated. In extreme circumstances, anaphylaxis may ensue. The condition is present in 1 in 2000 adults.
  - Dermatographism (Fig. 5.6) is characterized by red linear indurated streaks with stroking of the skin.
  - Solar urticaria occurs on photoexposed skin. It usually occurs within minutes to 1 hour of sun exposure, which differs from other photosensitive conditions, such as polymorphous light eruption, which is more delayed (Fig. 5.7).

Diagnosis

- The diagnosis of cholinergic urticaria, the most common form of physical urticaria, requires clinical correlation about precipitating factors with the small size of the lesions. In addition to pruritus, cholinergic urticaria typically produces a subtle stinging sensation.
- Cold urticaria is diagnosed by the ice cube test, in which an ice cube is applied to the skin for 2 to 5 minutes, with re-examination at 10-minute intervals (Fig. 5.5). Test sensitivity is about 85%, but the specificity is nearly 100%.
- Dermatographism is easily diagnosed by wheals produced by firmly stroking the skin with an object such as the blunt end of a pen (see Fig. 5.6).

Treatment

- Cold urticaria is treated with avoidance of exposure. Remember that angioedema and anaphylaxis can occur and can even be fatal.
- Cholinergic urticaria is treated with avoidance of activities that cause undue overheating.
- All forms of physical urticaria may be treated with antihistamines, as discussed for simple urticaria.

Fig. 5.4. Patient with small urticarial uniform papules characteristic of cholinergic urticaria. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 5.5. Wheal produced by an ice cube in a patient with cold urticaria. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 5.6. Patient with dermatographism. Linear wheals of the back are created by stroking the skin with a pen.

Fig. 5.7. Patient with solar urticaria on the back of the hand. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Angioedema ICD10 code T78.3

Classification of Angioedema

Hereditary

Acquired

- Acquired C1 esterase inhibitor (C1-INH) deficiency
- Allergic
- Drug-induced
  - Angiotensin-converting enzyme (ACE) inhibitors
  - Penicillin
  - Nonsteroidal antiinflammatory drugs (NSAIDs)
- Malignancy

Pathogenesis

Angioedema is characterized by deeply situated edema of the lower dermis and/or subcutaneous tissue (including the submucosa). Although some patients may present with both urticaria and angioedema, in many cases angioedema occurs in isolation.

Clinical Features

- Sudden localized swelling of skin and/or mucosal surfaces is seen, usually without a wheal and flare reaction (Figs. 5.8 and 5.9).
- Typically, angioedema resolves in 1 to 3 days, without permanent sequelae.
- Involvement of the respiratory tract can be fatal, but this is more common in hereditary angioedema (see below).
- Abdominal pain due to edema of the bowel wall can be severe, but this is also more common in hereditary angioedema (see below).

Diagnosis

- The presence of coexisting urticaria is an important finding. Nearly all patients with hereditary angioedema have the condition in isolation. Patients with acquired disease often have both angioedema and urticaria at the same time.
- About 80% of patients with hereditary angioedema report similar attacks in family members.
- The serum C4 level is a sensitive but nonspecific screening tool. C4 levels are low in acquired angioedema and in hereditary forms of angioedema caused by C1-INH deficiency.
- Therefore, if a low level of C4 is detected, quantitative (type I) and functional (type II) C1-INH studies should be commissioned to refine the diagnosis further.
- Mast cell tryptase levels are usually normal in hereditary angioedema but may be elevated in acquired forms.

Treatment

- Intubation or tracheostomy may be necessary in patients with severe laryngeal edema and respiratory distress.
- Severe attacks need to be observed in the emergency room or hospital.
- Ecallantide is a subcutaneously administered recombinant plasma kallikrein inhibitor. However, it must be administered in a controlled environment because anaphylactic reactions to the drug have been reported.
- Icatibant is a bradykinin B2 receptor antagonist that is given subcutaneously and may even be self-administered by the patient during an acute attack.
- Danazol was used as a prophylactic treatment in the past, but it has now largely been replaced by more effective and safer treatments.

Fig. 5.8. Patient with mild acquired angioedema of the lips that was unassociated with urticaria. The cause was never identified.

Fig. 5.9 A, Hereditary angioedema in a patient during an acute attack. The photograph was taken by the patient at home. B, Same patient as seen between attacks. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Papular Urticaria ICD10 code L50.0 (allergic urticaria) or T14.8

Arthropods That Frequently Cause Papular Urticaria

- Bedbugs
- Black flies *(Simulium)*
- Chiggers
- Deerflies
- Fleas
- Lice
- Midges
- Mites
- Mosquitoes

Pathogenesis

Papular urticaria is defined as an urticarial reaction that persists for longer than 24 hours at the site of an insect or arthropod bite. If a papule lasts for less than 24 hours at the site, it is simply insect- or arthropod-induced urticaria. Papular urticaria and bullous insect—arthropod—bite reactions differ only in the intensity of the reaction.

Clinical Features

- Lesions may be single or multiple and are usually located on exposed skin.
- Typically, lesions consist of 2- to 10-mm erythematous red papules (Fig. 5.10). Less often, the lesions are larger (Fig. 5.11).
- Lesions may resolve within hours or may become fixed red papules (Fig. 5.12) of variable size. A central punctum may sometimes be identified.
- Papular urticaria often demonstrates a tendency to become more pruritic and urticate with trauma, such as excoriation.
- Later changes include scaling, central erosion or ulceration, and a brown-red color (Fig. 5.13).

Diagnosis

- Patients may suspect the diagnosis and/or may be aware of the source. Some patients may bring in the insect or arthropod. In the last decade, bedbug bites in particular have reached epidemic proportions.
- The presence of erythematous papules, with a central punctum, are consistent with the diagnosis.
- In some situations, other similarly affected household members may support the diagnosis, but it is important to realize that this is not the case with all insects and arthropods. For example, not all persons react to bedbug bites, and two people, both living in an infested environment, may not each demonstrate bite reactions.
- A 3- or 4-mm punch biopsy that extends to the subcutaneous fat may provide strong evidence, because bite reactions very often manifest eosinophils in the deepest aspects of the dermis and subcutis.

Treatment

- Most lesions are self-limited, but in the case of ongoing exposure (e.g., bedbug infestation), professional extermination services will be necessary.
- For some infestations (e.g., fleas), destruction of infested fomites or treatment of family pets may be necessary.
- Potent topical corticosteroids to affected areas may provide relief and shorten the course of the pruritus.
- Antihistamines may be used for pruritus.
- Other topical medications containing antipruritic agents (e.g., menthol and camphor [Sarna], prasugrel [Prax], zinc oxide [Calamine]) may be of benefit.

Fig. 5.10. Papular urticaria in an adult due to mosquito bites.

Fig. 5.11. Papular urticaria with large wheals occurring in a child and with an unknown cause. (From the William Weston Collection, Aurora, CO.)

Fig. 5.12. Patient with older lesions of papular urticaria, with some lesions in lines, as is typically seen in some bite reactions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 5.13. Patient with resolving lesions of papular urticaria, with brownish color and focal scaling. (From the William Weston Collection, Aurora, CO.)

Urticarial Vasculitis ICD10 code L95.8

Drugs Reported to Cause Urticarial Vasculitis
- Chewing gum preservative
- Enalapril
- Fluoxetine (Prozac)
- Glimepiride
- Paroxetine (Paxil)
- Procainamide
- Trimethoprim-sulfamethoxazole

Pathogenesis

Urticarial vasculitis is a low-grade, small-vessel, leukocytoclastic (neutrophil-mediated) vasculitis. Clinically, the condition resembles urticaria. The disease is subdivided into patients with urticarial vasculitis and normal complement levels and patients with urticarial vasculitis and low complement levels. Cases of urticarial vasculitis may be associated with connective tissue disease (e.g., systemic lupus erythematosus [SLE], Sjögren syndrome), infections (e.g., hepatitis B and C), malignancies (e.g., multiple myeloma) and drugs (see box).

Clinical Features

- Urticarial vasculitis is more common in women.
- Patients may demonstrate three types of primary lesions, including classic urticaria (Fig. 5.14) lesions, angioedema, and fixed urticarial plaques that last longer than 24 hours.
- Patients frequently complain of burning or a combination of burning and itching rather than itching alone.
- Primary lesions are often fixed erythematous plaques (lasting >24 hours at a specific location), with central clearing, focal hemorrhage, or central discoloration (Fig. 5.15).
- Individual lesions usually last 3 to 7 days, but some may persist longer.
- Systemic findings often include malaise, low-grade fever, arthralgias, and arthritis. Less often, there is lymphadenopathy, hepatosplenomegaly, gastrointestinal disturbances, and upper airway symptoms.

Diagnosis

- Fixed urticarial plaques, lasting longer than 24 hours, should arouse suspicion for urticarial vasculitis. Moreover, if the patient relates a burning sensation, this also supports that diagnosis. In some cases, lesions demonstrate a focal hemorrhage or red-brown or yellow color due to hemosiderin.
- A 3- or 4-mm punch biopsy should be performed to determine the diagnosis. However, the diagnostic features may be missed in a single biopsy. Sometimes, more than one biopsy will be necessary to establish the diagnosis. In some cases, direct immunofluorescence studies may be helpful.
- All patients should have their complement levels determined because this is a major branch point in disease classification.
- If no cause is immediately apparent, laboratory investigations should include ANA-ENA studies and serologic studies for hepatitis A, hepatitis B, and Epstein-Barr virus infections.

Treatment

- Withdraw any drugs that may cause urticarial vasculitis.
- Antihistamines are often used, particularly in patients with coexisting urticaria and angioedema, but this treatment is not useful for fixed plaques.
- Oral prednisone, 20 to 80 mg/day (depending on severity), is used for acute management.
- Steroid-sparing medications used in chronic management include hydroxychloroquine, dapsone, azathioprine, colchicine, and sometimes indomethacin, although NSAIDs sometimes cause simple urticaria.

Fig. 5.14. Large urticarial wheals on the leg in a patient with urticarial vasculitis. These wheals are indistinguishable from those of urticaria, and the diagnosis was established by biopsy.

Fig. 5.15. Patient with urticarial vasculitis. In this case, in addition to the wheals, there were several areas of yellow-brown dyspigmentation, which suggests hemorrhage. This finding is suspicious for urticarial vasculitis.

Pruritic Urticarial Papules and Plaques of Pregnancy (Polymorphic Eruption of Pregnancy) ICD10 code O99.7

Pathogenesis

Pruritic urticarial papules and plaques of pregnancy (PUPPP), also called *polymorphic eruption of pregnancy,* is the most common dermatosis of pregnancy. It occurs in about 1 in 200 pregnancies. The condition is more common in women with a male fetus, women with rapid and pronounced weight gain, and women who ultimately deliver by cesarean section. The cause of PUPPP is poorly understood.

Clinical Features

- Typically, PUPPP begins in the third trimester (average onset is at 36 weeks gestation).
- Often, PUPPP begins in the striae gravidarum of the lower abdomen (Fig. 5.16) and over time may spread to the thighs, proximal arms, low back, or even more distant sites.
- Primary lesions are urticarial papules and plaques (Figs. 5.17–5.19).
- Less often, there are focal vesicular or eczematous features or even targetoid lesions.
- Unusual morphologies are observed later in the course of disease.
- PUPPP is usually intensely pruritic.
- Mucous membranes are not involved.

Diagnosis

- The clinical presentation is usually characteristic.
- Occasional patients may require a 3- or 4-mm punch biopsy to exclude herpes gestationis, a variant of bullous pemphigoid occurring during or immediately after pregnancy. Typically, the biopsy shows features consistent with PUPPP, but there are no pathognomonic findings of only that disorder.
- A biopsy of uninvolved perilesional skin may be needed for direct immunofluorescence studies to exclude herpes gestationis more definitively.

Treatment

- Because the lesions resolve over 1 to 3 weeks after delivery, no treatment is required if the patient can tolerate the condition.
- Topical corticosteroids may reduce pruritus and erythema but do not alter the course of disease. Usually, a moderate-strength or strong topical corticosteroid is used (triamcinolone or fluocinolone), with patients typically responding within 2 to 4 days.
- Oral H1 antihistamines are considered safe during pregnancy, and diphenhydramine is often used to relieve pruritus and provide a sedative effect before bed.
- Short courses of oral prednisone (10–40 mg/day for 3–7 days) are reserved for severe cases.

Clinical Course

Most cases resolve completely, without sequelae, within 1 to 3 weeks after delivery. There are no known harmful effects on the fetus.

Fig. 5.16. Early PUPPP in a primigravida woman with involvement of the striae. (From the John Aeling Collection, Aurora, CO.)

Fig. 5.17. Patient with PUPPP demonstrating urticarial papules and plaques. Note accentuation in the striae. (From the William Weston Collection, Aurora, CO.)

Fig. 5.18. Patient with urticarial plaques developing in the striae, associated with smaller papular lesions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 5.19. Patient with urticarial papules and plaques on the arm and elbow. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Sweet Syndrome ICD10 code L98.2

Drugs Frequently Implicated in Sweet Syndrome
- Abacavir
- Granulocyte colony-stimulating factor (G-CSF)
- Lenalidomide
- Minocycline
- Trimethoprim-sulfamethoxazole

Pathogenesis

Sweet syndrome (acute febrile neutrophilic dermatosis) is a neutrophilic condition that yields an urticaria-like reaction pattern. The condition may be precipitated by a variety of insults, including medications, underlying malignancy (myeloid and solid tumors), autoimmune disorders, inflammatory bowel disease, and infection.

Clinical Features

- Typically, the condition affects young adults and geriatric patients; children are rarely affected.
- The condition is more common in women than men.
- Symptoms of an upper respiratory syndrome or malignancy are present in many patients.
- The primary lesion is a tender, round to oval, erythematous papule or plaque (Figs. 5.20–5.22).
- The condition usually affects the distal extremities and acral areas.
- Some patients may demonstrate a pseudovesicular (juicy) edge, frank pustules, or even ulceration (Fig. 5.23).
- Systemic findings include fever, malaise, arthralgias and/or arthritis, conjunctivitis, and oral lesions that resemble aphthous ulcers.

Diagnosis

- Because the clinical findings are rather nonspecific, a biopsy is usually recommended.
- A CBC may demonstrate neutrophilia, and neutropenia in the setting of Sweet syndrome is more concerning for an associated lymphoid malignancy.
- Antibodies to neutrophil cytoplasmic antigens, antineutrophil cytoplasmic antibodies (ANCAs), are demonstrated in about 80% of cases, and the ESR can also be elevated.
- A 3- or 4-mm punch biopsy is often suggestive or even diagnostic of the condition.

Treatment

- Oral prednisone, with an initial dose of 20 to 60 mg/day, tapering over 2 to 4 weeks, is the most commonly used treatment.
- Doxycycline or minocycline, 100 mg PO bid for 2 to 6 weeks, can also be used.
- Indomethacin, 100 to 150 mg/day for 1 to 3 weeks, can also be used.
- Colchicine and dapsone are alternatives that are used less often.

Clinical Course

In most cases, Sweet syndrome resolves over a period of weeks, without sequelae. Patients who do not respond to therapy or who have neutropenia should be evaluated for an underlying systemic disorder (e.g., myelogenous leukemia, connective tissue disorder, inflammatory bowel disease).

Fig. 5.20. Patient with numerous erythematous papules and plaques affecting the upper extremities. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 5.21. Patient with Sweet syndrome, with urticarial lesions secondary to acute myelogenous leukemia. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 5.22. Patient with numerous erythematous papules and plaques affecting the upper extremities. (From the William Weston Collection, Aurora, CO.)

Fig. 5.23. Patient with numerous erythematous papules and small plaques, with some lesions demonstrating central crusting.

Erysipelas ICD10 code A46

Pathogenesis

Although *cellulitis* is a broad term used for many bacterial infections of the dermis and subcutis, **erysipelas** is a specific clinical variant of facial cellulitis caused by *Streptococcus* spp. Erysipelas is characterized by sharply indurated, erythematous plaques with a distinct edge that results from lymphatic drainage of the face. Most cases are the result of the inoculation of bacteria through miniscule breaks in the skin. Rare cases are due to seeding of the skin from another distant nidus of infection (e.g., a dental abscess). The primary cause of erysipelas in adults is *Streptococcus pyogenes* (group A β-hemolytic streptococci), whereas in newborns it is *Streptococcus agalactiae* (group B streptococcus). Nonstreptococcal species that can produce erysipelas-like infection include *Haemophilus* spp., *Staphylococcus aureus,* and, rarely, gram-negative bacteria.

Clinical Features

- Erysipelas most often affects children or older adults, but those in any age group may be affected.
- Most erysipelas involves the central face (Fig. 5.24), but any site may be affected.
- The condition yields a brawny, edematous, erythematous, *peau d'orange*–appearing plaque, with a sharply demarcated (so-called cliff drop) edge (Figs. 5.25–5.27).
- Edema of the eyelids, vesicles, bullae, pustules, and/or petechiae may be present.
- Regional tender lymphadenopathy (i.e., preauricular) is often present.
- Systemic symptoms, including fever, chills, and prostration, are commonly present.
- Streptococcal cellulitis may be recurrent.

Diagnosis

- The diagnosis is usually based on the clinical presentation of an area of red tender induration that is often unilateral. The presence of tender regional lymphadenopathy is also supportive.
- A 3- or 4-mm punch biopsy is typically more sensitive than aspirations or blood cultures. The biopsy should be divided, with half being cultured and half undergoing routine histologic examination.
- Aspiration and culture of the edge yields a positive result in 4% to 50% of cases, whereas blood cultures are positive in only 10% of cases.
- A CBC may often demonstrate leukocytosis of more than 10,000 cells/mm^3 or a left shift.
- Serologic tests (e.g., antistreptolysin O titer [ASOT]) are of limited value because antibodies are not produced early in the course of the infection.
- Anti-DNase B assays are superior to the ASOT in detecting skin streptococcal infection.
- Response to appropriate antibiotic therapy is rapid, with rapid improvement in 48 hours.

Treatment

- Mild cases can be treated on an outpatient basis, but severe cases, especially those with central facial involvement, may require hospitalization. Diabetic or immunocompromised patients may also require admission.
- Mild cases may be managed on an outpatient basis with oral cephalexin (Keflex), dicloxacillin, erythromycin, clarithromycin, or azithromycin.
- Intravenous (IV) alternatives include cefazolin, 250 mg to 1 g IV or IM every 6 to 8 hours, depending severity of infection.
- Severe cases should be treated with IV nafcillin or oxacillin (1–2 g IV q 4h).
- Penicillin, often listed in the older literature, is no longer a wise choice because some cases of cellulitis caused by staphylococcal species have been noted. However, it may be used once culture and sensitivity studies have returned.

Clinical Course

In the preantibiotic era, the mortality rate was reported to be as high as 40%.

Fig. 5.24. Patient with erysipelas. Shown is a painful central, tender, red indurated plaque affecting the nose on the left nasolabial fold. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 5.25. Patient with erysipelas. Shown is a unilateral red, tender, edematous plaque. The patient also had a tender, enlarged, right preauricular lymph node. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 5.26. Patient with erysipelas demonstrating a sharply demarcated red tender plaque of the nose and left cheek.

Fig. 5.27. Patient with erysipelas demonstrating a sharply demarcated tender plaque of the left side of the face, with involvement of the ear. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Pathogenesis

Cellulitis is a broad term that includes bacterial infections (rarely, fungal infections may mimic this pattern), which primarily affect the dermis and, to a lesser extent, the subcutis. The most common causes are *S. pyogenes* (group A β-hemolytic streptococci), *S. aureus,* and several species of gram-negative bacteria. Lymphangitis is a frequent component of cellulitis—hence the lay term *blood poisoning.* Erysipelas, facial streptococcal cellulitis, is a clinical subset of cellulitis that has been discussed earlier.

Clinical Features

- It may affect any age group.
- The primary lesion is a tender area of erythematous induration that usually demonstrates an indistinct border early on (Fig. 5.28); however, sharply demarcated borders may be seen late in the course (Fig. 5.29).
- In some cases, the site of introduction due to the break in the skin may be evident; it may vary from a small pustule (see Fig. 5.28) to an abscess or even an ulcer.
- Lymphangitis presents as linear ill-defined areas of erythema that extend from the site of infection to the regional lymph nodes (Fig. 5.30).
- Edema may be a prominent feature when an extremity or the genitalia are involved (Fig. 5.31).
- The regional lymph nodes may be enlarged and tender.
- Systemic symptoms may include malaise, fever, and anorexia.

Diagnosis

- The diagnosis is usually based on the clinical presentation of an area of red tender induration, which is often unilateral. The presence of lymphangitis and tender regional lymphadenopathy is also supportive.
- A 3- or 4-mm punch biopsy is typically more sensitive than aspirations or blood cultures. The biopsy should be divided, with half being cultured and half undergoing routine histologic examination.
- Aspiration and culture of the edge yields a positive result in 4% to 50% of cases, whereas blood cultures are positive in only 10% of cases.
- A CBC may often demonstrate leukocytosis of more than 10,000 cells/mm^3 or a left shift.
- Serologic tests are of limited value because many infections are not streptococcal.
- Response to appropriate antibiotic therapy is rapid, with improvement in 48 hours.

Treatment

- Mild cases can be treated on an outpatient basis; however, many cases will require hospitalization. Diabetic or immunocompromised patients are especially strong candidates for admission.
- Mild cases may be managed on an outpatient basis with oral cephalexin (Keflex), dicloxacillin, erythromycin, clarithromycin, or azithromycin.
- IV alternatives include cefazolin, 250 mg to 1 g every 6 hours, depending on the severity of the infection.
- Severe cases should be treated with IV nafcillin or oxacillin (1–2 ga q4h).
- As always, the culture and sensitivity results may dictate a change in therapy.

Clinical Course

The mortality rate in the antibiotic era is difficult to calculate; however, it has been estimated that there are about 30,000 deaths from cellulitis worldwide every year.

Fig. 5.28. Patient with staphylococcal cellulitis, with a large pustule at the site of injury, ill-defined painful erythema, and induration.

Fig. 5.29. Sharply defined cellulitis of the buttock region in a hospitalized patient. A biopsy failed to identify an organism; however, the patient responded to IV antibiotics.

Fig. 5.30. Patient with streptococcal cellulitis of the finger and hand demonstrating lymphangitis extending into the axilla. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 5.31. Patient with cellulitis of the anogenital region due to *Escherichia coli*. This patient demonstrated significant systemic symptoms and required a biopsy for culture and sensitivities in addition to hospitalization.

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Chapter 6
Papular Eruptions: No Scale

Differential Diagnosis of Papular Eruptions
- Bedbug bites
- Chiggers
- Fox-Fordyce disease
- Gianotti-Crosti syndrome
- Miliaria
- Mite bites (or bites of other insects or arthropods)
- Papular eczema (see atopic dermatitis)
- Papular drug eruptions
- Scabies

Although papular eruptions are not always listed as a separate clinical category in dermatology texts, there are some diseases that present with a decidedly papular quality. Moreover, whereas some diseases remain papular over time (e.g., insect and arthropod bite reactions), other skin conditions may present in a polymorphic fashion, with papules that coalesce into plaques.

IMPORTANT HISTORY QUESTIONS

How long have the papules (bumps) been present?

Acute presentations are typical of viral exanthems, id reactions, and acute drug eruptions, whereas a more chronic course favors papular atopic dermatitis, repetitive or chronic insect or arthropod bite reactions, or a prolonged or chronic drug reaction.

Did all the papules (bumps) start at the same time?

Some papular conditions present as a single wave of lesions (e.g., Gianotti-Crosti syndrome), whereas others present as crops of lesions in different phases (insect, arthropod reactions), and yet others present as continuous or seemingly random eruptions (e.g., papular atopic dermatitis).

Have you had a similar rash in the past?

An affirmative response favors exacerbation of a chronic condition (e.g., atopic dermatitis) or a repeat exposure to an exogenous agent or external trigger (e.g., insect or arthropod bite reactions, miliaria).

Where did the rash start?

Determining the area that was first involved may suggest a cause. The involvement of extremities that protrude from the bedsheets may suggest bedbugs, and involvement of the lower extremities after outdoor activities may suggest chiggers; a photodistribution may suggest polymorphous light eruption.

Have you or your immediate relatives had eczema, asthma, or hay fever (seasonal allergies)?

An affirmative response may suggest an atopic diathesis, leading to the consideration of papular atopic dermatitis.

What sort of work do you do?

Certain occupations predispose a person to insect or arthropod bite reactions (e.g., grocers, animal handlers or groomers, veterinarians, hotel and hospitality industry workers).

How do you feel?

Systemic symptoms such as fever, malaise, sore throat, or others may suggest a viral infection.

Have you started any new medications in the last month?

Papular drug eruptions are uncommon but are reversible with discontinuance.

How are you treating this rash?

Over-the-counter treatments, home remedies, or even some prescription medications may improve or worsen a papular dermatitis. This important information will guide the diagnosis and immediate care.

What do you think caused your rash?

This is an obvious question that is often overlooked—some patients may have keen insight into their condition.

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the papules?

Some papular lesions have distinct distributions. Scabies preferentially affects the wrist, intertriginous areas, and genitalia, whereas chiggers preferentially occurs beneath areas of the skin where clothing is in close contact. Gianotti-Crosti, on the other hand, tends to affect acral areas.

Are any linear lesions present?

Scabies burrows are short linear lesions that can be a diagnostic clue in an otherwise enigmatic pruritic papular dermatitis.

Scabies ICD10 code B86

Pathogenesis

Scabies is caused by the human scabies mite, *Sarcoptes scabiei* var. *hominis*. It is acquired chiefly by skin to skin contact, usually between family members and sexual partners. Although mites remain viable in bed linens for up to 96 hours, most infestations are not acquired from fomites. The pruritus of a scabies infestation is caused by an allergic response to mite antigens in their saliva, eggs, and feces (scybala).

Clinical Features

- Symptoms occur within 1 to 6 weeks after a first infestation and 1 to 3 days after a repeat infestation.
- Patients typically complain of marked generalized pruritus that is more pronounced at night.
- Primary lesions are usually found in the axillae, wrists, interdigital spaces, and groin. It has been found that 80% of all cases present with evidence on the wrists and interdigital webs of the hands.
- Other commonly affected areas include the nipples, beltline, umbilicus, and buttocks.
- The lesions of scabies often appear as follows:
  - Papules—1- to 3-mm erythematous papules; these are typically numerous (Figs. 6.1 and 6.2).
  - Nodules—5- to 10-mm red or red-brown nodules that are often found on the penis (Fig. 6.3)
  - Burrows—1- to 5-mm threadlike linear or serpiginous forms, with varying erythema and scale. The adult mite may appear as a gray fleck at the end of the burrow (Fig. 6.4).
  - Atypical lesions—pustules may occur on the acral surfaces of infants and toddlers or as psoriasiform hyperkeratotic plaques in immunocompromised and/or mentally impaired individuals (crusted, Norwegian scabies).

Diagnosis

- Scabies should be in the differential diagnosis for any patient with pruritus and numerous papules.
- The diagnosis is substantiated by recognition of a burrow and performance of a scabies prep (see Chapter 2) to identify the mite, eggs, or scybala. A skin biopsy (usually a shave) can be performed in an attempt to recognize the same structures, but the results will be delayed by days.
- Even though a patient may have hundreds of papular lesions, in a typical case there are only 10 to 15 adult mites on the entire body, and a skin scraping or biopsy may not encapture diagnostic evidence.
- If microscopic evidence cannot be demonstrated by a skin scraping or skin biopsy, a response to appropriate empiric treatment may be diagnostic.

Treatment

- Topical permethrin, 5% cream, is a first-line agent for treating scabies. It is applied to the whole body, from the neck down, left on the skin for 8 hours (overnight), and then washed off in the shower. A second treatment a week later may be needed to eradicate all mites.
- Precipitated sulfur (10%) may be applied to the whole body, from the neck down, for 3 consecutive days. The use of sulfur was once advocated for pregnant women, although many literature reviews on the subject have expressed no reservations regarding the use of permethrin, 5% cream.
- Topical 1% lindane lotion is now a second- or third-line agent but should not be used in children or pregnant women. It is banned entirely in California.
- Crotamiton, 10% cream, is not as effective as other therapies, with resistance reported.
- Oral ivermectin use has been increasing, with 200 μg/kg of body weight given as a single dose. Because it is not an ovicide, many experts advocate giving a second dose 1 week later. Oral ivermectin may be used with topical permethrin 5% cream in recalcitrant cases. The safety of oral ivermectin use during pregnancy has not been established.
- Although there are little data to support it, all clothing and linens should be decontaminated by machine washing in hot water and drying using a hot cycle.

Fig. 6.1. Hand of a patient with scabies. There are small erythematous papules of the intertriginous space, a characteristic location. (From the William Weston Collection, Aurora, CO.)

Fig. 6.2. Patient with scabies. There are small erythematous papules of the trunk, with one lesion demonstrating an excoriation.

Fig. 6.3. Patient with so-called nodular scabies. The name is somewhat of a misnomer because most lesions are large papules. These diagnostic lesions are almost exclusively seen on the head of the penis.

Fig. 6.4. Scabies burrows. There is a small, new linear burrow on the bottom and an older burrow on the top. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Chiggers (Trombiculosis) ICD10 code B88.0

Pathogenesis

Chigger bites are caused by the larval stage of certain species of trombiculid mites (Fig. 6.5). In the United States, the predominant species is *Trombicula alfreddugesi,* and chiggers occur chiefly in the humid portions of the Midwest and Southeast. The red six-legged larvae lie in ambush on blades of grass or other short vegetation (typically, <15 inches off the ground), leap onto a passing host, and attach and feed for 3 to 4 days before dropping to the ground. The chigger is smaller than 1 mm in size and can barely be seen by the human eye.

Patient Myth

Many patients have been taught by their families and friends to treat chigger bites with nail polish or various glues to suffocate the mite. In many cases, the mite has already dropped off. Occlusion actually increases heat retention at the site of the bite, which will increase pruritus. The only potential benefit is that the polish or glue will reduce skin damage from excoriations.

Clinical Features

- The primary lesion is a red papule that may demonstrate a small, central, punctum-like area.
- Marked pruritus is a near-constant feature.
- Lesions occur in crops and are notoriously grouped on the ankles, behind the knees, or along points of pressure or contact of clothing (Figs. 6.6–6.8).
- Patients with considerable sensitivity to chigger bites may develop bullous lesions, but this is uncommon.
- Secondary excoriation may be more impressive than the primary lesion and may lead to persistent papules or superimposed prurigo nodules.
- Secondary bacterial infection may also occur.

Diagnosis

- A clinical history of discrete erythematous papules, in appropriate areas, and after outdoor activities in an endemic area, should strongly suggest the diagnosis.
- Chiggers are found chiefly in the southeastern and south central United States and are not present in the Rocky Mountains.
- Skin scrapings may demonstrate the mite on rare occasion, but because the organism is only present transiently and does not complete its life cycle on humans, this is not typically used.

Treatment

- No treatment is reasonable because the lesions are self-limited.
- Topical products with pramoxine may provide some limited but immediate relief from the pruritus.
- Potent topical corticosteroids applied bid provide modest relief in 24 to 48 hours.
- For exceptional cases only, intralesional triamcinolone (2.5 mg/mL) may be used to reduce inflammation and decrease pruritus.
- The prevention of chigger bites is helpful, typically by applying *N,N*-diethyl-3methyulbenzamide (DEET) to the skin, using DEET-impregnated clothing, wearing long pants, and tucking pant legs into boots when hiking.

Clinical Course

The lesions resolve over 5 to 14 days.

Fig. 6.5. Under the microscope, chigger mites demonstrate six legs and a reddish color. They are redder by gross examination (400× original magnification, cropped).

Fig. 6.6. Patient with typical papular lesion of chigger bites acquired in Georgia (United States), with accentuation under the elastic of the underwear. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 6.7. Patient with innumerable pruritic papular lesions of chiggers, with marked accentuation under the elastic of the sock. (From the William Weston Collection, Aurora, CO.)

Fig. 6.8. Patient with unusually large pruritic papules, with accentuation under the elastic of the underwear. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Mite Bites (Ascarine Dermatitis) ICD10 code B88.0

Selected Mites That Produce Mysterious Papular Dermatitis

- *Acarus* (grains, flour)—baker's itch
- *Tyrolichus* (cheese)—grocer's itch
- *Cheyletiella* (dogs, cats)—pet itch
- *Dermanyssus* (birds)—poultry itch
- *Liponyssoides* (mouse)
- *Ophionyssus* (snakes)—snake mite itch
- *Ornithonyssus* (birds)—poultry itch
- *Pyemotes tritici* (straw)—straw itch
- *Pyemotes herfsi* (oak leaf itch)

Pathogenesis

In addition to scabies and chiggers, other mites found in the environment, on pets, on wild animals, and even on foods can yield a bite reaction. In these cases, the human is an accidental host, and the mite feeds and quickly drops off, producing a mysterious papular eruption that is self-limited.

The source of ascarine dermatitis can be difficult to establish. For example, in 2004, there were more than 300 cases of a mysterious itchy papular dermatitis in Kansas, Nebraska, and Missouri that required a team of health care providers and entomologists to identify the cause—the oak leaf itch mite.

Clinical Features

- There is a sudden onset of pruritic small papules (Figs. 6.9A and 6.10A).
- In some cases, the papular dermatitis may have a background of macular or patchy erythema or may demonstrate a microscopic focus of hemorrhage at the bite site.
- Typically, the eruptions last 3 to 7 days and are self-limited.
- The distribution is variable and is not particularly characteristic.

Diagnosis

- Ascarine dermatitis should be considered with any outbreak of a cryptic, pruritic, papular dermatitis.
- Scabies or chiggers should always be excluded through a medical history and physical examination.
- Suspicious lesions should be scraped for a scabies prep to include or exclude a scabies infestation.
- A 3- or 4-mm biopsy may support the diagnosis and exclude other diagnoses, but the histologic findings of ascarine dermatitis are nonspecific.
- Important factors to consider include the patient's home environment (especially any pets), work environment and occupation, leisure hobbies, and outdoor activities.
- The most common causes include *Cheyletiella yasguri* (found on dogs, especially puppies), *Cheyletiella blakei* (found on cats; see Fig. 6.9B), and *Cheyletiella parasitovorax* (found on rabbits). In animals, the organisms are often visible and are described as looking like so-called walking dandruff.

Treatment

- No treatment is a reasonable course of action because the lesions are self-limited.
- Topical products with pramoxine may provide some limited but immediate relief from the pruritus.
- Potent topical corticosteroids, applied twice daily, provide modest relief in 24 to 48 hours.
- Very pruritic patients may be treated with sedating antihistamines (diphenhydramine) at night.
- The exposure must be identified and eliminated. All pets should be examined by a veterinarian. A veterinarian specializing in animal dermatology is preferred because mites on animals can be difficult to identify. Even when animal mites cannot be identified, empiric treatment of pets is often a reasonable consideration.

Clinical Course

- The lesions typically resolve over 3 to 14 days without treatment.

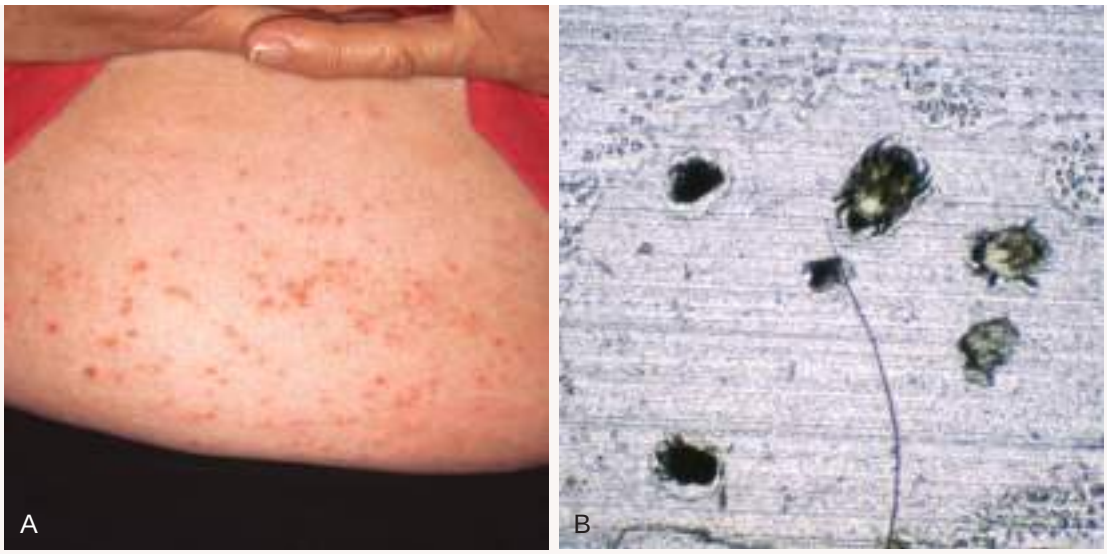

Fig. 6.9 A, *Cheyletiella* mite bite acquired from a cat that was often kept on the patient's lap. It is important to note that the cat was examined by a veterinarian and declared to be free of mites. B, Tape preparation prepared on the cat, which was brought in as requested. Multiple mites are clearly present. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

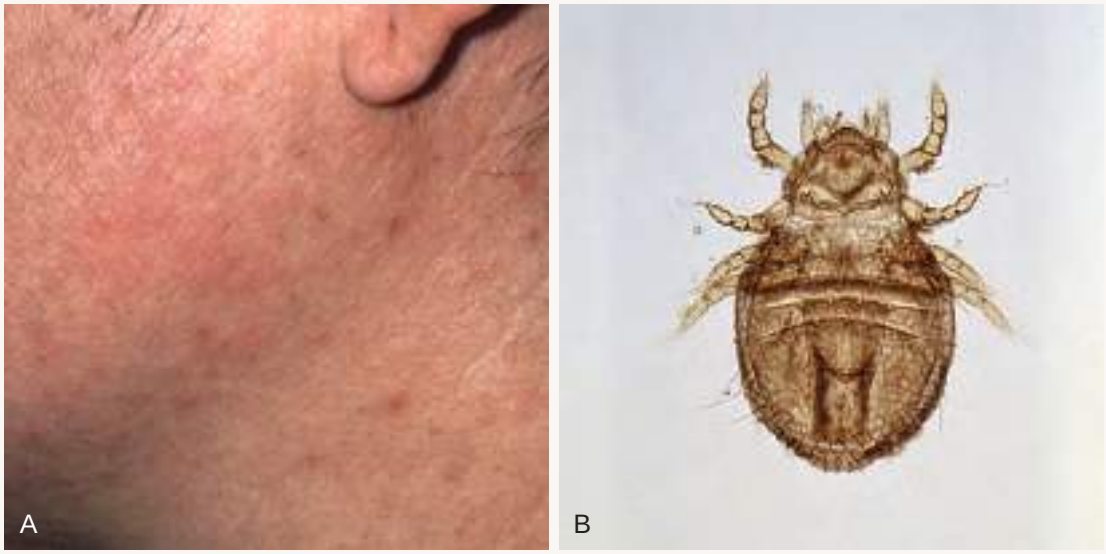

Fig. 6.10 A, Patient with a cryptic pruritic papular eruption, with a focal background of macular erythema. A careful history revealed that the patient slept on a tatami mat. B, Examination of the patient's rice straw from his tatami mat revealed numerous tatami mites, which are also known as *dani.* (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Bedbug Bites ICD10 code S30.860

Online Tip
For travelers, there is a user-reported database of bedbug infestations in hotels and apartments that may be accessed on the Internet or via a free smartphone app (http://www.bedbugregistry.com). However, it is clearly a forum where postings cannot be substantiated by any third party.

Pathogenesis

In the past 2 decades, papular reactions due to bedbug bites *(Cimex lectularius)* have reached epidemic proportions. Evidence has suggested that this meteoric rise is due to increased international travel and lesser use of pesticides with long residual times of action.

Adult bedbugs are flattened, chestnut brown, wingless insects with six legs. The average adult is 4 to 5.5 mm in length (Fig. 6.11). The bedbug requires at least five blood meals to reach maturity. Adults are capable of elaborating an odor, and heavily infested rooms have a distinct smell, likened to that of coriander. Adult females lay eggs that are 1 mm in size, white, and ovoid, with an operculum at one end.

Clinical Features

- Primary lesions are erythematous papules that may demonstrate a small, central, punctum-like area. Typically, more than one lesion is present (Fig. 6.12). Bullous lesions are rare.
- Marked pruritus is a consistent feature.
- Bedbug bites are notoriously present in groups, often two to four papules, with a slightly linear configuration (so-called breakfast, lunch, and dinner pattern; Figs. 6.13 and 6.14).
- Bedbugs often bite the thin skin around the eye, which may produce edema (the so-called eyelid sign).
- Secondary features include excoriation or even features of a superimposed prurigo nodule.
- A secondary bacterial infection may also occur.

Diagnosis

- The diagnosis should be suspected in any patient who wakes up with a mysterious papular eruption, and the patient should be questioned about the home environment, particularly a travel history.
- The patient or family may bring in the bedbug, and a definitive diagnosis can be made.
- Inspection of the sleeping area is requisite, and in 80% of cases, evidence of bedbugs (adults, nymphs, eggs, or stains from blood or feces) may be found within 3 feet of the bed.
- It may be useful to have the patient go to bed at the normal time, turn off the lights, wait for 15 to 30 minutes, and then turn on the light suddenly, at which time the bedbugs can often be recovered.
- Examination of bedsheets may demonstrate red-brown bloodstains or small fragments of excrement.
- Not all persons react to bedbug bites, so the fact that only one person in the household has a papular rash does not exclude bedbugs.
- A small punch biopsy may demonstrate features consistent with a bite reaction, but the results are not diagnostic of only that entity.

Treatment

- Eradication of the infestation, which often requires professional assistance, is the only lasting cure.
- The bedbug bites may be treated symptomatically with topical pramoxine, topical corticosteroids, and antihistamines.

Fig. 6.11. Adult bedbug brought in a plastic baggie by a patient.

Fig. 6.12. Patient with grouped red edematous papules, without an identifiable punctum. (From the William Weston Collection, Aurora, CO.)

Fig. 6.13. Patient with grouped red papules of variable size, with a central punctum, with three of them demonstrating a linear arrangement. These bedbug bites were acquired in a college sorority house.

Fig. 6.14. Patient with three papules with central punctum in a line, the so-called breakfast, lunch, and dinner pattern.

Gianotti-Crosti Syndrome (Papular Acrodermatitis of Childhood)

ICD10 code L44.4

Pathogenesis

Gianotti-Crosti syndrome (GCS) is a distinct reaction pattern that occurs in response to different viral infections, including hepatitis B virus, Epstein-Barr virus, respiratory syncytial virus, various echoviruses and coxsackieviruses, and milker's nodules. Immunizations (e.g., polio, diphtheria-pertussis-tetanus, measles-mumps-rubella) and bacterial infections are less often associated with GCS.

Clinical Features

- GCS usually affects infants and young children, but the child appears otherwise well and is not febrile.
- Monomorphous papules begin abruptly and may be edematous (Fig. 6.15) or erythematous (Figs. 6.16 and 6.17).
- Pruritus is a variable feature.
- GCS has a characteristic distribution, with lesions on the face and extremities (even the proximal extremities), but with sparing of the trunk.
- On occasion, the lesions may be flat-topped (Fig. 6.18).

Diagnosis

- The clinical presentation of a monomorphic papular eruption or, less often, a flat-topped papular eruption, with involvement of the face and extremities and with sparing of the trunk, is diagnostic.
- Laboratory tests that include liver function tests (LFTs) and viral serologies for hepatitis B, hepatitis A, hepatitis C, and Epstein-Barr virus should be considered.
- Occasional cases may require a 3- or 4-mm punch biopsy, mostly to exclude other entities, because the histologic findings of GCS are not specific and merely support the diagnosis.

Treatment

- No treatment is a reasonable course of action because the lesions are self-limited and are usually not especially pruritic.
- Pruritus may be managed with antihistamines.
- Patients with abnormalities in liver function or with affirmative testing for hepatitis should be referred to a gastroenterologist for definitive diagnosis and management.

Clinical Course

The patient and/or parents should be informed that cutaneous lesions may be present for up to 6 weeks.

Fig. 6.15. Patient with monomorphic markedly edematous papules of the hands and legs. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 6.16. Erythematous papular lesions without significant edema on the lower leg of a young child. (From the Joanna Burch Collection, Aurora, CO.)

Fig. 6.17. Erythematous mildly edematous papules on the dorsum of a child's foot. (From the William Weston Collection, Aurora, CO.)

Fig. 6.18 Patient with flat-topped papular lesions of Gianotti-Crosti syndrome. In our experience, flat-topped lesions are a far less common clinical presentation.

Miliaria (Prickly Heat) ICD10 codes L74.0, L74.2, and L74.3

Pathogenesis

Miliaria is a papular eruption produced by blockage of the eccrine sweat duct, with resultant extravasation of sweat into the skin and an inflammatory response. Research on human volunteers has revealed that miliaria can be produced by a combination of thermal stimulation, occlusion, and coagulase-negative staphylococci. Further studies have shown that antimicrobial agents prevent the development of experimental miliaria. Additional studies have implicated *Staphylococcus epidermidis* as the bacterial species involved in the development of miliaria. Miliaria is common in hot humid climates and during infancy and childhood.

Clinical Features

- Miliaria usually causes the acute onset of monomorphous erythematous papules that are unassociated with hair follicles but are associated with an environment that causes increased sweating (Fig. 6.19).
- Areas of the skin that are covered by clothing or under occlusion are predisposed.
- The palms and soles are uninvolved, and the face is rarely involved (Fig. 6.20).
- Symptoms vary from pruritus to stinging to burning.
- Lesions typically resolve over 2 to 7 days if there are no additional thermal insults to the skin.
- With repeated episodes, the eccrine sweat duct may become permanently damaged with anhidrosis.
- Clinical variants include malaria rubra, miliaria pustulosa (see Fig. 6.20), and miliaria profunda (Fig. 6.21). Often, more than one variant may be present in the same patient.

Diagnosis

- In most cases, the diagnosis may be made on clinical grounds based on a characteristic appearance and on the relevant environmental circumstances.
- Rare cases or atypical presentations may require a 3- or 4-mm punch biopsy that can be supportive or even diagnostic (if the correct tissue plane is present).
- In cases with a pustular component, bacterial culture of the purulent debris should be considered.

Treatment

- Reassurance is adequate in most cases because the lesions are self-limited.
- It is important to keep the patient cool and the area dry and well-ventilated. However, sometimes this is not possible due to the patient's occupation or other environmental circumstances
- Lightweight loose-fitting clothing is helpful; occlusive clothing should be avoided (see Fig. 6.21).
- In patients with unpreventable heat exposure (e.g., soldiers in the field) and recurring episodes of miliaria, oral antibiotics may prevent or ameliorate the development of lesions. One of the authors (JEF) has met with variable anedotal success using oral erythromycin or tetracyclines, but many strains of *S. epidermidis* are resistant to these antibiotics, and culture and sensitivity testing may be required.
- Anecdotal reports have touted the use of topical skin lubricants, but controlled trials are lacking.

Clinical Course

The lesions spontaneously resolve over a period of 2 to 7 days.

Fig. 6.19 Typical lesions of miliaria rubra on the leg. Of importance is that they do not demonstrate an association with hair follicles.

Fig. 6.20 Miliaria rubra on the face of an infant, including some lesions that are pustular (miliaria pustulosa). The face is an unusual location of miliaria. (From the William Weston Collection, Aurora, CO.)

Fig. 6.21 A mixture of smaller lesions (miliaria rubra) and larger, more indurated lesions (miliaria profunda) in a patient who was using elastic wraps in an attempt to lose weight around the waist. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 7
Scaly Papular Lesions

Key Terms

Lichen Planus
- Annular lichen planus
- Bullous lichen planus
- Hypertrophic lichen planus

Grover Disease
- Transient acantholytic dermatosis

Actinic Keratosis
- Atrophic actinic keratosis
- Hypertrophic actinic keratosis
- Pigmented actinic keratosis

Scaly papular disorders include an unrelated admixture of neoplastic and inflammatory disorders characterized by small palpable lesions with variable scale, which are usually smaller than 1 cm in their greatest diameter. Some disorders, such as guttate psoriasis, may contain some lesions larger than 1 cm and would technically be classified as scaly plaques. Some lesions that are typically papular may become exuberant enough (e.g., actinic keratosis) that they are morphologically scaly nodules.

IMPORTANT HISTORY QUESTIONS

How long has the lesion(s) been present?

Some of the disorders in this group may appear acutely (e.g., guttate psoriasis, lichen planus); other disorders (e.g., actinic keratoses) appear gradually.

Have you had a similar lesion(s) in the past?

A "yes" answer favors some disorders with a genetic basis, such as psoriasis or actinic keratoses, that tend to occur in the background of chronic sun damage.

Do any of your immediate relatives have psoriasis?

A "yes" answer indicates a genetic predisposition for the development of psoriasis.

Have you had any previous pre–skin cancers or skin cancers?

A positive history of a previous pre–skin cancer or skin cancer indicates that the patient has had enough sun damage to promote the development of pre–skin cancers (e.g., actinic keratoses), squamous cell carcinoma in situ, and squamous cell carcinoma.

How are you treating your skin condition?

Many patients use home-based, over-the-counter (OTC), or prescription remedies that can alter the appearance of the condition.

Are you taking any medications?

Some medications may precipitate or aggravate some of the disorders discussed in this chapter. For example, psoriasis can be worsened by beta blockers, lithium, and terbinafine. Lichen planus can be mimicked by numerous medications (e.g., thiazide diuretics).

Have you had a recent illness?

This is important because streptococcal infections frequently precipitate episodes of guttate psoriasis, and lichen planus can be associated with virus-induced hepatitis.

IMPORTANT PHYSICAL FINDINGS

How many lesions are present?

Some of the disorders in this section can be solitary or multiple (e.g., actinic keratosis) or are characteristically multiple (e.g., psoriasis, lichen planus, lichen nitidus).

What is the distribution of the lesions?

Some of the disorders demonstrate a characteristic location. For example, guttate psoriasis usually affects the trunk and proximal extremities.

Is the oral mucosa involved?

Lichen planus frequently involves the oral mucosa, and finding characteristic involvement can be useful in establishing the diagnosis. In contrast, psoriasis only rarely involves the oral cavity and, if present, it is usually confined to the tongue. Actinic keratoses may involve the sun-exposed mucosa of the lower lip (actinic cheilitis) but do not involve the protected oral mucosa.

Are the nails normal or abnormal?

The nails are frequently involved in psoriasis, Darier disease, and occasionally lichen planus, but most of the remaining disorders typically demonstrate normal nails.

Guttate Psoriasis ICD10 code L40.4

GENETIC DISORDER

Pathogenesis

Psoriasis is a common hereditary disease with a chronic course that primarily affects the skin, with variable involvement of the joints and oral mucosa. The cutaneous manifestations are protean; these include classic plaques (see Chapter 8), pustular psoriasis (see Chapter 12), erythrodermic psoriasis, and the guttate pattern of psoriasis. Although psoriasis is a genetic disorder, it is generally preceded by a trigger; guttate psoriasis is often the initial manifestation of the psoriatic diathesis. The most common trigger in the guttate variant is streptococcal pharyngitis (63%). Less commonly implicated triggers include a recent life crisis (46%), skin injury, drugs, and exposure to ultraviolet (UV) light.

Drugs Implicated in Triggering Guttate Psoriasis

- Beta blockers (most common)
- Biologic agents (e.g., infliximab)
- Lithium
- Terbinafine

Clinical Features

- Guttate psoriasis can affect any portion of the body; however, it demonstrates a marked predilection for the trunk and proximal extremities (Fig. 7.1).
- The primary lesion is manifested by small, pink to reddish papules that typically vary from 2 to 10 mm in size; however, larger lesions can be present. Very early lesions may not yet demonstrate scale (Fig. 7.2), with mature lesions demonstrating variable scale (Fig. 7.3).
- The Koebner phenomenon—psoriasis developing at sites of superficial trauma—occurs in about 5% of patients with psoriasis and is especially common during acute flares of guttate psoriasis (see Fig. 7.3).
- Nail involvement (see Chapter 25) can be present but usually does not occur in early guttate psoriasis, when patients are most likely to present to an urgent care or emergency room setting. If present, it is usually seen as distinct nail pits. Less commonly in guttate psoriasis, the patient may demonstrate yellowish-brown areas of discoloration below the nail (oil spots).

Diagnosis

- There is a clinical presentation of uniform papules with scale that is of an acute onset.
- The presence of the Koebner phenomenon is strongly supportive of the diagnosis.
- The presence of significant nail pitting or oil spots in the nail bed is strongly suggestive of psoriasis.
- There may be a family history; first-degree relatives with psoriasis can be identified in about one-third of patients.
- Some cases may require a 3- or 4-mm punch biopsy of a well-developed lesion, which is more likely diagnostic.

Treatment

The selection of therapy depends on the patient's age and general health, cost, local availability of specialized treatment facilities, distribution and extent of the lesions, and motivation of the patient.

- In most cases, the treatment of choice is light therapy; the best options are natural sunlight (cheapest), UVB phototherapy, which includes narrow-band UVB, or methoxsalen plus UVA.
- The primary topical option is once- or twice-daily application of topical corticosteroids of varying strengths, depending on the location, severity of disease, and response to therapy.
- For severe or resistant cases, acitretin is a consideration.
- In patients with guttate psoriasis, strongly consider empiric oral antibiotics to eliminate infectious triggers, and carefully review the patient's medications for potential triggering drugs.

Guttate Psoriasis Outcomes

- In the largest study to date (79 patients), 25% of patients went on to develop chronic plaque psoriasis, but the remaining patients did not. There were no known clinical or laboratory findings that could predict the outcome for a given individual.
- Of patients with guttate psoriasis, only 65% were clear or improved at 3 months, and 99% were clear or improved at 12 months.
- Although not evaluated in this study, some patients will have more than one episode of guttate psoriasis.

Fig. 7.1. Typical trunk and proximal extremity distribution of guttate psoriasis. Note the koebnerized lesions on the left upper arm. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 7.2. Early guttate psoriasis in a young child. In early lesions, the scale is not present or minimal; however, the prominent red color and uniform appearance is strongly suggestive. (From the William Weston Collection, Aurora, CO.)

Fig. 7.3. Close-up of a patient with developed lesions of guttate psoriasis demonstrating abundant white scale. These lesions are diagnostic and do not require a biopsy. (From the William Weston Collection, Aurora, CO.)

Lichen Nitidus ICD10 code L44.1

Pathogenesis

This is a relatively uncommon, self-limited dermatosis of unknown cause that is usually discussed as a papulosquamous disorder in most texts. Although the pathogenesis is understood, occasional patients have associated lichen planus. This association, plus the finding of dead keratinocytes, suggests a host autoimmune response against keratinocytes.

Clinical Features

- Lichen nitidus usually affects children, adolescents, and young adults, but any age group can be affected. It can be found in any ethnic group, but black patients are most commonly affected.
- Patients are typically asymptomatic, but rare patients may complain of mild pruritus.
- Typically, there is a symmetric diffuse eruption that usually affects the trunk and proximal extremities (Fig. 7.4). In males, the genitalia are frequently involved (Fig. 7.5).
- The primary lesion consists of a 1- to 3-mm round papule, with no scale or a small amount of detectable scale. The papules can be skin-colored but are often lighter than the surrounding skin due to the scale.
- Lesions may focally have linear configurations due to superficial minor trauma (Koebner phenomenon; Fig. 7.6).
- Lichen nitidus with focal hemorrhage is a very rare clinical variant.

Diagnosis

- The differential diagnosis includes atypical lichen planus, papular secondary syphilis, papular sarcoidosis, and atypical Langerhans cell histiocytosis.
- Clinical appearance is usually diagnostic, and further testing is not required.
- If secondary syphilis is a clinical consideration (i.e., atypical presentation in a sexually active adolescent or young adult), a rapid plasma reagin (RPR) test or venereal disease research laboratory (VDRL) test is appropriate.
- If papular sarcoidosis is a clinical consideration—that is, the patient has clinical features such as larger lesions, facial lesions, or systemic symptoms—a screening chest x-ray may be indicated.
- A skin biopsy (e.g., shave biopsy, 3-mm punch biopsy) is not usually indicated, but if the presentation is atypical, it is usually diagnostic because the histologic findings are specific.

Treatment

- Reassurance should be given to the patient because this a self-limited, harmless skin disorder.
- A weak topical corticosteroid (1% hydrocortisone) to midstrength topical corticosteroid (0.1% triamcinolone) is recommended if the lesions are pruritic.

Clinical Course

Lichen nitidus typically goes away within weeks but usually months, with some cases lasting as long as 1 year. There are no permanent sequelae, although rare patients may demonstrate residual hyperpigmentation.

Fig. 7.4. Patient with lichen nitidus. Shown are the characteristic uniform symmetric papules, with white scale on the extremities. The large number of lesions is unusual. (From the Walter Reed Army Medical Center Collection, Washington, DC.)

Fig. 7.5. In males, the genitalia is frequently affected in lichen nitidus. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 7.6. Close-up of lesions demonstrating the Koebner phenomenon. This is a helpful feature for the diagnosis of lichen nitidus.

Lichen Planus ICD10 code L43

Pathogenesis

Lichen planus is relatively common, with one epidemiologic study reporting a prevalence of 0.4% in the United States. The cause is not entirely understood, although studies have suggested that it is an autoimmune disease based on histologic findings, immunologic data, and association with other autoimmune diseases. Of interest is the weak association of chronic, ulcerative lichen planus with hepatitis C infection.

Clinical Features

- Lichen planus may occur at any age (average age of onset, 52 years); pediatric cases only account for 2% of cases.
- The primary lesions are intensely pruritic, violaceous, polygonal papules that may demonstrate a fine white lacy appearance on the surface; these are called *Wickham striae* (Figs. 7.7 and 7.8). Although classified as a papulosquamous disease, the amount of scale is variable and may even be absent.
- In patients with a darker skin color, the lesions may be heavily pigmented due to pigmentary incontinence (see Fig. 7.7). The Koebner phenomenon (isomorphic response), consisting of linear lesions at the site of trauma, is commonly present and usually occurs in active disease.
- In regard to distribution, any cutaneous site can be affected, although the most common locations are the arms (especially the wrists) and legs. Rare patients may demonstrate an inverse distribution affecting the axillae and groin. Very rarely, the lesions may be unilateral and linear.
- Other mucocutaneous findings include lacy white lesions of the buccal mucosa (Fig. 7.9), oral ulcerations, scarring alopecia (lichen planopilaris), and nail dystrophy. Approximately two-thirds of patients with cutaneous lichen planus will demonstrate oral involvement.
- Clinical variants include **annular lichen planus,** in which there is a central area of clearing that is often hyperpigmented, **hypertrophic lichen planus,** characterized by thick, hyperkeratotic pruritic papules on the anterior aspect of the lower legs, and **bullous lichen planus,** which is very rare.

Diagnosis

- In regard to the clinical presentation, beware of lichenoid tissue reactions that are photodistributed because these are, without fail, lichenoid drug eruptions.
- A 3- or 4-mm punch biopsy is better than a shave biopsy for distinguishing lichen planus from lichenoid drug eruptions.

Treatment

The following therapeutic options may be considered:

- Topical corticosteroids (betamethasone inhalers useful in diffuse oral disease)
- Intralesional corticosteroids
- Oral corticosteroids, with the dose and duration dependent on the extent of disease and response
- Topical isotretinoin, 0.1% gel, for oral lesions
- Oral hydroxychloroquine, 200 to 400 mg/day. Expect that about 50% of patients will show a complete response in 6 months, with the remainder demonstrating a partial or no response.
- Oral griseofulvin, 500 mg/day, is a controversial treatment, with two studies demonstrating improvement within 2 weeks and two studies showing no improvement.
- Psoralen and UVA—in one study of 35 patients, 86% of patients were improved or cleared.
- Patients with what appears to be oral lichen planus, with no involvement elsewhere, should have patch testing performed to exclude amalgam filling sensitivity. More than 95% of patients with a positive patch test can expect complete or partial resolution with removal of their amalgam fillings.

Clinical Course

Most cases of lichen planus spontaneously resolve in 1 to 2 years, but it can persist for decades. Oral lichen planus has a slightly increased incidence for the development of squamous cell carcinoma.

Fig. 7.7. Lichen planus. Numerous hyperkeratotic papules have focally coalesced into small plaques in a patient of color. This patient has prominent koebnerization.

Fig. 7.8. Close-up of characteristic violaceous polygonal papules on the wrist and volar forearm, which is a characteristic site for lesions.

Fig. 7.9. Patient with oral lichen planus. Shown are superficial erosions and lacy white lesions on the buccal mucosa. (From the John Aeling Collection, Aurora, CO.)

Secondary Syphilis ICD10 code A51.3

Pathogenesis

Secondary syphilis is due to the lymphatic and hematogenous spread of the sexually acquired spirochete *Treponema pallidum*.

Clinical Features

- It typically starts 6 to 12 weeks after the chancre of primary syphilis. There may be no history of a chancre, or the chancre may still be present.
- The most common primary lesions are maculopapular lesions of variable size, with variable scale. However, the primary lesions can also be macular only, papular (may even appear acneiform), or nodular. Some cases may also be annular.
- The lesions are typically red but also frequently demonstrate a red-brown color (so-called ham-colored) or yellow-brown color (copper-colored; Fig. 7.10). In patients with a darker skin color, the lesions may be pigmented.
- Distribution is typically generalized, but there is a distinct tendency for palmar and plantar involvement, with about 50% of patients demonstrating lesions at these sites (Fig. 7.11).
- In some cases, there are papules that may split at the angle of the mouth; these are appropriately called *split papules,* and they strongly support the diagnosis (Fig. 7.12).
- The oral mucosa may demonstrate mucous patches that can be white or red, with some patients demonstrating linear white patches reminiscent of snail tracks.
- The genital mucosa may demonstrate condyloma lata, which are papules that vary from being moist and eroded to scaly and eroded (Fig. 7.13). These lesions have a distinct tendency to be flat-topped.
- Alopecia is often present; it varies from being subtle to demonstrating modest hair loss. Although patchy alopecia (moth-eaten alopecia) is most characteristic, diffuse alopecia that is indistinguishable from telogen effluvium is more common. Less commonly, discrete areas of hair loss that may mimic those of alopecia areata are present.

Diagnosis

- The clinical presentation can be strongly suggestive; however, confirmation is always needed.
- For serologic testing, an RPR or VDRL test should be done as a screening test. If positive, the diagnosis can be confirmed with a more specific test, such as the fluorescent treponemal antibody absorption (FTA-ABS) test.
- A 3- or 4-mm punch biopsy of lesional skin can be diagnostic. The hematoxylin and eosin (H&E) findings can be strongly suggestive, and the diagnosis can be confirmed by the pathologist or dermatopathologist with the use of a silver stain (e.g., Warthin-Starry or modified Steiner) or with a more sensitive immunoperoxidase stain.
- A darkfield examination of serous exudates for spirochetes from lesional skin is sensitive in skilled hands but is not readily available in most areas.

Treatment

- The treatment of secondary syphilis is dependent on a number of factors and is in constant flux. Before treating a patient with any form of syphilis, the latest Centers for Disease Control and Prevention (CDC) treatment guidelines should be consulted (http://www.cdc.gov/std/tg2015/syphilis.htm).
- The requirements for reporting a patient with syphilis vary from state to state; however, given that this disease is transmitted from person to person, all cases should be reported to the appropriate local health authorities.

Fig. 7.10. Patient with secondary syphilis presenting with yellow-brown scaly papules on the trunk, extremities, and head of the penis (Fitzsimons Army Medical Center Collection, Aurora, CO).

Fig. 7.11. Patient with secondary syphilis presenting as hyperpigmented maculopapules, with subtle scales on the palms.

Fig. 7.12. Characteristic split papule at the corner of the mouth in a patient with secondary syphilis.

Fig. 7.13. Patient with condyloma lata. There are flat-topped crusted and scaly papules on the distal penis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Molluscum Contagiosum ICD10 code B08.1

Pathogenesis

Molluscum contagiosum is caused by four serotypes of the molluscum contagiosum virus (MCV-1 through MCV-4). MCV-1 predominantly affects children, and MCV-2 is primarily a sexually transmitted disease of young adults—that is highly contagious (40% of patients can identify an infected relative or close friend). Epidemiologic studies have suggested that most cases are due to close physical contact (e.g., sexual activity); however, it is clear that fomites (e.g., shared towels) can transmit infection.

Clinical Features

- It predominantly affects children, young adults, and immunocompromised patients, with up to 18% of all HIV-infected individuals reported to be infected in one study.
- It features 1- to 5-mm pearly skin-colored or whitish papules (occasionally larger), with central keratotic umbilication that resembles small volcanoes (Fig. 7.14).
- The number of lesions varies from one to hundreds (Fig. 7.15).
- Atypical presentations include lesions with hyperkeratotic spicules (Fig. 7.16) and lesions that become inflamed (Fig. 7.17).
- In regard to distribution, it may affect any area of the skin that normally has hair follicles (spares palms and soles). It has a genital predilection in sexually active adolescents and young adults.

Diagnosis

- The clinical presentation is usually diagnostic, and additional testing is not required.
- In atypical cases (inflamed lesions), the lesions can be biopsied with a shave or punch biopsy.

Treatment

- Benign neglect is an option because spontaneous resolution is normal.
- Curettage is time-consuming, is difficult to carry out in young children, and may require the use of a local anesthetic; however, it is the most efficacious therapy in skilled hands.
- Cryotherapy with liquid nitrogen by spray, probe, or cotton-tipped applicator is the most commonly used provider therapy. Freeze for about 6 to 8 seconds and repeat in 3 weeks if needed.
- Tunable dye laser use is limited to clinicians that have this in their facility.

Topical Application

- When using topical cantharidin (0.7% in a flexible collodion base), applied to the top of lesions, patients should be instructed to wash it off in 2 to 6 hours. Warn patients about blisters that may become painful. It is recommended that no more than 20 lesions be treated in a single session with this modality.
- Topical 0.05% podophyllotoxin, applied once daily for up to 2 weeks
- Topical 12% salicylic acid gel, applied twice weekly for up to 12 weeks
- Topical 5% imiquimod cream—apply three times weekly for up to 16 weeks. An open label study on 15 children has demonstrated complete resolution or a partial response in 9 of 13 children (69%) who completed the study. In a second randomized trial of 23 patients, in which the patients applied imiquimod for 12 weeks, there was a 46% reduction in the number of lesions compared to the vehicle group, in which there was a 27% increase in the number of lesions. This treatment has also been used as adjunctive therapy following other therapies (e.g., topical cantharidin).

Clinical Course

- The course is highly variable, although most untreated lesions resolve within 2 to 4 years in immunocompetent patients. As one would expect, the number and duration of lesions is greater in immunocompromised patients.

Fig. 7.14. Patient with molluscum contagiosum. Multiple papules of variable size demonstrate the characteristic central keratotic core.

Fig. 7.15. Patient with numerous smaller, umbilicated, keratotic papules of the face. The treatment of young children with lesions near the eyes with a destructive or caustic substance is often not possible.

Fig. 7.16. Patient with an uncommon presentation of molluscum contagiosum, with unusually prominent keratotic cores. (From the William Weston Collection, Aurora, CO.)

Fig. 7.17. Patient with inflamed molluscum contagiosum, with some resemblance to an eroded pyogenic granuloma. Inflamed lesions are more frequently biopsied.

Grover Disease ICD10 code L11.1

Pathogenesis

Grover disease, also called **transient acantholytic dermatosis,** is a disease of uncertain pathogenesis that demonstrates an association with altered sweating, including frequent hot tub use, sauna use, bedridden patients, and sweat-inducing exercise. A respected dermatologist has noted that he can induce lesions on himself by just taking a prolonged hot shower that has a sauna function. In some but not all patients, the keratotic papules have shown a connection to the opening of eccrine sweat glands.

Clinical Features

- Typically, it affects middle-aged and older patients (>45 years).
- It is more common in men than women.
- There is an abrupt or gradual onset of lesions.
- The distribution is primarily to the trunk, with some patients demonstrating involvement of the proximal extremities (Figs. 7.18 and 7.19). In bedridden patients, the lesions may be confined to the back.
- A primary lesion is usually a 2- to 5-mm keratotic papule, although rarely there are papulovesicles. An atypical presentation includes large lesions that are often more pruritic and more erythematous (Fig. 7.20).
- The color varies from skin-colored to reddish-brown to reddish.
- Typically, there are numerous lesions.
- Symptoms are typically pruritic, usually minimal to modest in severity.

Diagnosis

- The clinical presentation is usually diagnostic, although some cases can be difficult to differentiate from low-grade folliculitis or even miliaria (heat rash).
- The diagnosis can be established by doing a small shave biopsy. The histologic findings can be seen in other disorders (e.g., Darier disease, Hailey-Hailey disease); however, when combined with the clinical presentation, a definitive diagnosis can be made.

Treatment

- Intense sweat-inducing activities (e.g., prolonged hot tub or sauna use, prolonged exercise) should be avoided.
- No treatment is an option because individual attacks disappear after the cessation of repeated sweat-inducing activities in some but not all patients.
- Topical antipruritic pramoxine-containing agents are useful for symptomatic relief.
- Weak (e.g., 1% hydrocortisone) to moderate strength (e.g., 0.1% triamcinolone) cream applied once or twice daily is helpful in reducing inflammation and pruritus but does alter the course.
- Trichloroacetic acid peeling has been used rarely, with some success.
- Psoralen and ultraviolet A (PUVA) or narrow-band UVB light is helpful in severe symptomatic cases.
- Triple antibiotic ointment (neomycin-polymyxin B-bacitracin) applied qd to affected areas for 1 month produces almost complete clearing in some patients.

Prognosis

Most therapies do not work well and provide only symptomatic relief. Despite the name transient acantholytic dermatosis, some cases are chronic and may persist for years due to repeated thermal stimulation.

Fig. 7.18. Patient with Grover disease. There are numerous brownish-red, hyperkeratotic, uniform lesions on the trunk. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

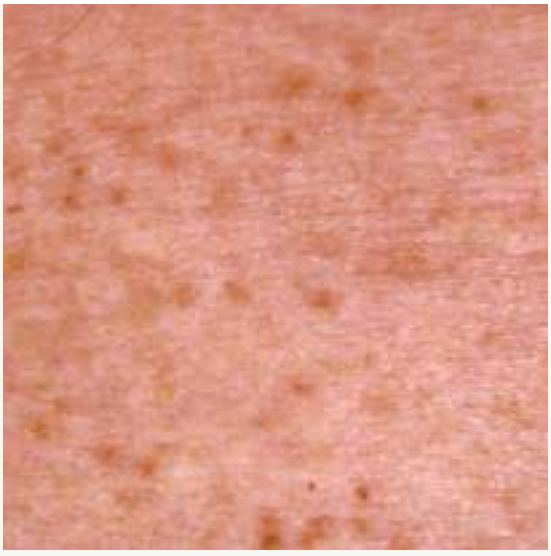

Fig. 7.19. Close-up of typical lesions in a patient with Grover disease demonstrating brownish-yellow to reddish-brown keratotic papules that are virtually identical to the primary lesions of Darier disease (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 7.20. Patient with atypical presentation of Grover disease demonstrating larger, more erythematous lesions. This presentation is usually associated with significant pruritus.

Actinic Keratosis ICD10 code L57.0

Pathogenesis

Actinic keratoses are precancerous lesions of the epidermis produced by UV light. They are much more common in fair-skinned individuals and immunosuppressed patients, especially transplant patients. Actinic keratoses have the potential to evolve into squamous cell carcinoma (SCC).

Clinical Features

- It is usually seen in fair-skinned individuals with a background of significant sun damage.
- Lesions are predominantly located on sun-exposed skin surfaces, with the head, neck, proximal forearms, and backs of the hands being the most severely affected.
- Lesions can be solitary but are usually multiple.
- Primary lesions are of variable size and usually present as white or gray-white scale on a subtly indurated papule (Figs. 7.21 and 7.22).
- The background color adjacent to the scale varies from being skin-colored to violaceous to red.
- Clinical variants include **atrophic actinic keratosis, pigmented actinic keratosis,** and **hypertrophic actinic keratosis** (Fig. 7.23).

Diagnosis

- An irregularly scaly papule of variable size on the sun-exposed skin of a patient with dermatoheliosis is an actinic keratosis until proven otherwise. In some patients, it may be difficult to differentiate from seborrheic keratosis, xerosis in the elderly, and SCC.
- Lesions that demonstrate significant induration that are suspicious for early SCC in situ or SCC should be biopsied. In most cases, a deep shave biopsy is adequate; however, a 3- or 4-mm punch biopsy is preferred for problematic lesions.

Treatment

- Cryotherapy with liquid nitrogen is the most commonly used therapy by clinicians, and a greater than 90% cure rate with a single treatment can be expected if done correctly.
- Topical 5-fluorouracil is available as multiple products, including Efudex (2% and 5% solutions, 5% cream), Fluoroplex (1% solution, 1% cream), and Carac (0.5% micronized cream). It should be applied qd to bid for 2 to 6 weeks. In general, the face requires 2 to 4 weeks of treatment (Fig. 7.24); the forearms and backs of the hands require 4 to 6 weeks of treatment. About 70% to 80% of lesions will resolve with this treatment regimen.
- Topical diclofenac can be applied bid for 3 months. The cure rate is about 50% if the entire 3-month course is completed. Although this is less than that seen with topical 5-fluorouracil, this treatment is tolerated by patients better than 5-fluorouracil.
- Topical retinoids (e.g., tretinoin) used for months to years on a daily basis produce about a 50% reduction in the number of actinic keratoses.
- Δ amino levulinic acid photodynamic therapy is inconvenient; it requires two office visits and specialized equipment that is usually limited to dermatologists.
- Topical imiquimod is applied twice or three times weekly for 16 weeks. It is as good (if not better) than topical 5-fluorouracil but is an expensive therapeutic modality.

Clinical Course

The exact risk of progression to SCC is controversial. Based on several studies, the calculated risk of an individual actinic keratosis developing into SCC is between 0.025% and 20%. It is reasonable to tell patients that the risk of development of untreated actinic keratoses into SCC is approximately 5%.

Fig. 7.21. Patient with actinic keratosis, with white scale and background erythema. Note the severely sun-damaged skin with yellowish discoloration, which represents solar elastosis.

Fig. 7.22. Multiple papules with yellowish scale on the nose in sun-damaged skin. The patient has background erythema due to rosacea. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 7.23. Patient with hypertrophic actinic keratosis with a small cutaneous horn on sun-damaged skin. These lesions are more likely to be biopsied to rule out squamous cell carcinoma.

Fig. 7.24. Patient with numerous actinic keratoses after 4 weeks of topical 5-fluorouracil demonstrating the necrosis of actinic keratoses. This is an excellent but uncomfortable treatment.

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Chapter 8
Plaques With Scale

Scaly plaques includes an unrelated admixture of neoplastic and inflammatory disorders characterized by larger, usually sharply defined palpable lesions, with variable scale.

IMPORTANT HISTORY QUESTIONS

How long has the lesion(s) been present?

Although all the lesions can be chronic, mycosis fungoides and psoriasis are often present for years.

Have you had a similar lesion(s) in the past?

A "yes" answer favors a disorder with a genetic basis, such as psoriasis, whereas pityriasis rubra pilaris is usually a onetime occurrence.

Do any of your immediate relatives have psoriasis?

A "yes" answer indicates a predisposition for the development of psoriasis. Rarely, pityriasis rubra pilaris can also be familial.

How are you treating your skin condition?

Many patients use home-based, over-the-counter (OTC), or prescription remedies that can alter the appearance of the condition.

Has the skin condition ever been biopsied?

This could be helpful in regard to any of the conditions in this chapter; however, it is especially important in mycosis fungoides. If this is a clinical consideration, have all previous biopsies reviewed by a pathologist or dermatopathologist with expertise in this area because the diagnosis is often missed.

Are you taking any medications?

Some medications may precipitate or aggravate some of the disorders discussed in this chapter. For example, psoriasis can be worsened by beta blockers, lithium, and terbinafine. Pityriasis rubra pilaris is also notoriously resistant to treatment with topical and systemic corticosteroids. We have seen more than one example in which this was the first clue to a diagnosis of evolving pityriasis rubra pilaris.

Have you had any recent illnesses or infections?

This is a very important question because psoriasis and reactive arthritis are genetic disorders that are often triggered by an infection. In particular, you would be interested in streptococcal infections for psoriasis and either an enteric infection or sexually acquired disease for reactive arthritis.

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the lesions?

Some of the cutaneous disorders demonstrate a characteristic location. For example, psoriasis frequently affects areas that are susceptible to trauma, such as the elbows and knees, whereas mycosis fungoides often begins in the girdle area.

Is the Koebner phenomenon present?

Of the disorders with large plaques and scale, only psoriasis demonstrates lesions at the sites of minor trauma.

Is the oral mucosa involved?

Although reactive arthritis frequently has oral involvement, psoriasis only rarely involves the oral cavity, whereas pityriasis rubra pilaris and mycosis fungoides almost never present with oral lesions.

Are the nails normal or abnormal?

The nails are frequently involved in psoriasis and reactive arthritis, whereas those with mycosis fungoides and pityriasis rubra pilaris usually have normal nails.

Is there any historical or clinical evidence of arthritis?

This is an extremely important question, not only from a diagnostic standpoint but also from a therapeutic standpoint, because joint involvement is the finding that usually dictates therapy for psoriasis and reactive arthritis.

Plaque Psoriasis ICD10 code L40.0

Drugs Implicated in Triggering or Aggravating Psoriasis
- Beta blockers (most common)
- Infliximab—paradoxic effect
- Lithium
- Terbinafine

Pathogenesis

Psoriasis is a common hereditary disease with a chronic course that primarily affects the skin, with variable involvement of joints and oral mucosa. It has been estimated that up to 7 million Americans have psoriasis. Psoriasis is a genetic disorder that usually arises in adolescents and adults after a trigger, such as a streptococcal infection, recent life crisis, skin injury, drugs, and alcohol and tobacco use.

Clinical Features

- Psoriasis may affect any area of the body; however, there is a distinct predilection to involve areas of trauma, such as the elbows, knees, and intergluteal fold.
- The primary lesion in a developed disease is an erythematous papule or plaque, with white adherent scale (Figs. 8.1–8.3). Scale is often absent in inverse psoriasis (Fig. 8.4), where the skin is moist.
- The Koebner phenomenon occurs in about 5% of patients.
- Nail involvement is common but not always present; it usually consists of variable numbers of distinct nail pits. Less common nail manifestations include yellowish-brown areas of discoloration below the nail (so-called oil spots) and full-thickness nail dystrophy (see Chapter 25).
- Patients may also demonstrate pustular lesions and may actually report a history of transforming back and forth between classic papulosquamous lesions and pustular lesions.

Diagnosis

- The clinical presentation of a papulosquamous eruption, with a distinct edge and silvery scale, in a characteristic distribution is usually diagnostic. Psoriasis is usually not pruritic in 80% of cases.
- The presence of the Koebner phenomenon is strongly supportive of the diagnosis.
- The presence of significant nail pitting or oil spots in the nail bed is strongly suggestive of psoriasis.
- In regard to family history, first-degree relatives with psoriasis can be identified in about one-third of patients.
- Rare cases may require a 3- or 4-mm punch biopsy of a well-developed lesion (more likely diagnostic).

Treatment

The selection of therapy depends on the patient's age and general health, cost, local availability of specialized treatment facilities, type of psoriasis (e.g., pustular vs. plaque), distribution of psoriatic lesions, extent of involvement, experience of the health care provider, and motivation of the patient.

- Topical options include corticosteroids of varying strength, depending on the location, severity of disease, and response to therapy. Approximately 80% of patients treated with topical corticosteroids will demonstrate significant clearance.
- Other commonly used topical options include calcipotriol, coal tar products, salicylic acid, tazarotene, and tacrolimus. Patients who do not respond to topical therapy should be evaluated by a dermatologist for alternative therapy.
- Ionizing radiation therapies include natural sunlight (cheapest option), ultraviolet B (UVB) phototherapy (to include narrow-band UVB), Goeckerman regimen (UVB + coal tar), PUVA phototherapy (methoxsalen + UVA), and 308-nm excimer laser.
- Systemic therapy options include methotrexate, mycophenolate, acitretin, cyclosporine, alefacept, infliximab, adalimumab, secukinumab, and etanercept.
- In patients with guttate psoriasis, or patients with a sudden flare of psoriasis, consider empiric oral antibiotics to eliminate infectious triggers.
- Discontinue any drugs implicated in triggering or aggravating psoriasis.

Fig. 8.1. Patient with numerous well-demarcated plaques of variable size, with focal marked scaling on the back. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 8.2. Close-up view of a characteristic lesion of a patient with psoriasis, with sharply demarcated borders and marked white scale. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 8.3. Psoriasis of the palms and soles may show sharply demarcated plaques, as seen here, or may have a diffuse pattern resembling that of hand dermatitis. (From the William Weston Collection, Aurora, CO.)

Fig. 8.4. Patient with inverse psoriasis of the axillae. Psoriasis in moister intertriginous areas often lacks scale; however, in contrast to dermatitis, the lesions are usually sharply demarcated, as demonstrated here.

Reactive Arthritis (Reiter Disease) ICD10 code M02

GENETIC DISEASE WITH A TRIGGER

Pathogenesis

Reiter disease, now called *reactive arthritis,* was named after a German army lieutenant, Hans Reiter, who reported this disease in 1916. In recent years, the use of his name has become controversial because he was convicted of being a Nazi war criminal. Reactive arthritis, like psoriasis, is seen in individuals with a genetic predisposition to develop the disease after exposure to the proper trigger. Epidemiologic studies have demonstrated that there is a 10% incidence of reactive arthritis among relatives of the proband, with a positive human leukocyte antigen B27 (HLA-B27) being present in about 70% of white patients with reactive arthritis. Enteric pathogens, including *Shigella, Salmonella*, *Yersinia,* and *Campylobacter* spp. and sexually transmitted *Chlamydia,* are the most common triggers.

Clinical Features

- There is often a history of enteric infection or *Chlamydia* infection 1 to 4 weeks before the onset of symptoms.
- The classic triad of Reiter disease is nongonococcal urethritis, conjunctivitis, and arthritis, with the classic triad being present at the time of presentation in only 40% of cases. The mucocutaneous findings are often critical in establishing the diagnosis. These are as follows:
  - Nail changes—often associated with keratodermia blennorrhagica. These consist of pitting, subungual hyperkeratosis, and onycholysis, which are clinically indistinguishable from the nail changes seen in psoriasis. Erythema and pustulation may occur in the paronychial tissues (Fig. 8.5).
  - Keratodermia blennorrhagica—skin lesions that begin as pinpoint erythematous papules that progress to pustules, hyperkeratotic papules, and plaques . Texts on this subject invariably only show pictures on the bottom of the feet, but these lesions frequently occur on the scalp, elbows, knees, buttocks, and genitalia. This occurs in approximately 30% to 50% of patients.
  - Circinate balanitis (balanitis circinata)—occurs on the glans penis as shallow, annular (circinate) erosions, ulcerations, or scaly plaques (Fig. 8.7). This occurs independently of the urethritis and is seen in up to 50% of patients. Women may experience an analogous circinate vulvitis.
  - Stomatitis is present in 40% of patients and presents as nonspecific painless erythema, erosions, or ulcerations on the palate, tongue (may resemble geographic tongue), gums, buccal mucosa, or lips.

Diagnosis

- Clinical presentation—the diagnosis is difficult because there is no single test. It requires both correlation and the exclusion of other possibilities.
- Useful laboratory tests include a blood test to detect the genetic factor HLA-B27. A positive test does not establish a diagnosis of reactive arthritis but is supportive. Negative results for an antinuclear antibody (ANA) and rheumatoid factor are helpful in excluding other clinical possibilities.
- A 3- or 4-mm punch biopsy of lesional skin is not diagnostic but can be supportive.

Treatment

- Appropriate antibiotic treatment for the suspected or proven bacterial trigger
- NSAIDs as initial therapy of arthritis
- Immunosuppressive agents (e.g., methotrexate) or biologic agents such as tumor necrosis factor-α (TNF-α) inhibitors for severe or recalcitrant cases
- Topical therapy of choice for the cutaneous manifestations—usually topical corticosteroids

Clinical Course

The initial episode typically lasts from 2 to 6 months, with 10% of patients experiencing chronic reactive arthritis lasting more than 12 months (Fig. 8.8). Approximately 50% of patients will experience two or more additional episodes.

Fig. 8.5. Patient with acute reactive arthritis, with proximal acute paronychia and onycholysis. A lesion on the foot of this patient is shown in the adjacent photograph (Fig. 8.6).

Fig. 8.6. Patient with keratodermia blennorrhagica demonstrating an admixture of erythematous papules and red plaques with scale. Note that there is also a lesion on the leg.

Fig. 8.7. Patient with balanitis circinate presenting as a small scaly plaque on the penis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 8.8. This 25-year-old man with chronic reactive arthritis had persistent scaly plaques and nail changes. The trigger in this case was a *Shigella* infection acquired in Turkey.

Pityriasis Rubra Pilaris ICD10 code L44.0

Pathogenesis

Pityriasis rubra pilaris (PRP) is an uncommon chronic skin disorder that may be acquired (most common) or familial (rare). The pathogenesis is not understood, but occasional reports of low serum levels of retinol-binding protein and resemblance to vitamin A deficiency have suggested an anomaly of vitamin A metabolism. This is important given the frequent response to retinoids. Familial pityriasis rubra pilaris has also been associated with *CARD14* mutations.

Clinical Features

- The much more common acquired form usually presents in middle-aged or older adults; the rare familial variant (autosomal dominant) is more likely to present in children.
- The primary lesions are typically erythematous and scaly (often salmon-colored) and characteristically develop in a cephalad to caudad fashion (Fig. 8.9), with islands of sparing (Figs. 8.10 and 8.11).
- Early in the course, this is usually confused with severe seborrheic dermatitis. Characteristic follicular papules, often on the dorsal aspects of the hands and fingers, have been described as feeling like a "nutmeg grater"; these are distinct and are not seen in seborrheic dermatitis.
- Hyperkeratotic palms (Fig. 8.12) and soles typically develop as the disease progresses and have been described as sandal-like. These are important clinical findings.
- Most patients experience variable pruritus; however, it is usually not as severe as that seen in dermatitis.
- Rarely, patients may eventuate into an exfoliative dermatitis. Patients with human immunodeficiency virus infection are more likely to develop severe pityriasis rubra pilaris.
- Paraneoplastic pityriasis rubra pilaris has also been very rarely reported; a specific associated malignancy has not been identified.

Diagnosis

- The diagnosis is often established by the clinical presentation of relentless, sharply demarcated areas of erythema, with a cephalad to caudad progression that becomes increasingly scaly.
- In some cases, the later manifestations of islands of sparing and hyperkeratotic lesions of the palms and soles are needed to confirm the diagnosis.
- The failure to respond to systemic corticosteroids is also common and is supportive of the diagnosis.
- Skin biopsies are often done. Although they are not usually diagnostic, in some cases they are strongly supportive.

Treatment

- Topical treatment with emollients improves the patient's symptoms and provides comfort without changing the course of the disease.
- An oral retinoid, isotretinoin (1.0–1.5 mg/kg per day) or etretinate (1 mg/kg per day), is the treatment of choice for most patients. The response rate at 4 months is about 75%.
- Oral methotrexate (10–25 mg/kg per week) is the second-line therapy. In our experience, the response rate is lower than with oral retinoids.
- There have been rare isolated case reports of response to biologic agents, such as infliximab.

Clinical Course

The acquired adult form carries a good prognosis because most patients spontaneously involute over a period of months, but the prognosis for the familial form is poor.

Fig. 8.9. Patient with erythematous macules coalescing into plaques, with variable scale. Note the cephalad to caudad progression. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 8.10. Pityriasis rubra pilaris in a patient with darker skin. The scale is more prominent and darker in color. Note the development of islands of sparing. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 8.11. Patient with resolving pityriasis rubra pilaris, with scattered islands of sparing. Note that the upper part of the body demonstrates evidence of resolution in a cephalad to caudad pattern. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 8.12. Marked erythema and scale on the palms of an elderly man with pityriasis rubra pilaris.

Mycosis Fungoides ICD10 code C84.0

Pathogenesis

Mycosis fungoides (MF) is a cutaneous T cell lymphoma caused by atypical epidermotropic lymphocytes (Fig. 8.13) that demonstrate the phenotypic and functional qualities of helper T cells. Clinical confusion with chronic eczematous dermatitis and papulosquamous diseases such as psoriasis and pityriasis rubra pilaris frequently occurs. Approximately 2000 new cases of mycosis fungoides are diagnosed each year in the United States.

Clinical Features

- This may occur at any age, including childhood, with the average age of onset being from 45 to 55 years. Males are more commonly affected than females.
- Lesions may occur anywhere but are especially common on the abdomen, hips, and upper thighs.
- The primary lesions in early disease are typically sharply demarcated areas of erythema with variable scale, with variable pruritus that is usually mild (Figs. 8.14 and 8.15).

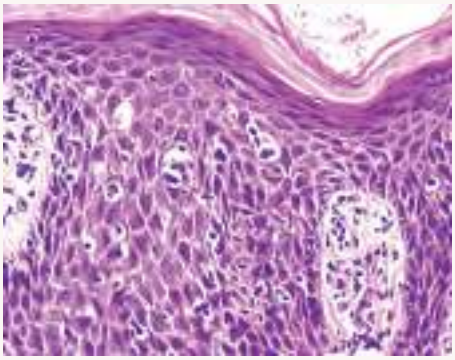

Fig. 8.13. Early mycosis fungoides (MF) demonstrating atypical lymphocytes in the epidermis. It is difficult to distinguish MF from eczematous dermatitis (H&E, 400×).

- As the lesions progress, they typically thicken into plaques and eventually tumors, which can even ulcerate (Fig. 8.16). Patches, plaques, and tumors may be present in the same patient.

Diagnosis

- The diagnosis of MF should be considered or suspected in any patient who demonstrates chronic scaly plaques that are refractory to treatment with emollients and corticosteroids.
- The diagnosis of MF is based on a biopsy. Early MF may be very difficult to diagnose; it is often missed (usually signed out as a nonspecific dermatitis) and frequently requires more than one biopsy. Because the histologic diagnosis is difficult, it is best to send biopsies of suspected cases to a dermatopathologist with expertise in this area.

Treatment

The treatment options in MF are complicated and numerous. In most cases, patients with MF should be referred to a dermatologist or, better yet, to a tertiary referral center with expertise in the management of MF.

- Commonly used topical treatment options include nitrogen mustard, carmustine (BCNU), imiquimod, and corticosteroids.
- Ionizing radiation therapy options include PUVA, RePUVA (retinoids plus PUVA), and electron beam and local radiation.
- Oral treatment options include isotretinoin, bexarotene, interferon-α, and systemic chemotherapy (usually for late-stage disease).
- Photophoresis (for Sézary syndrome or late-stage disease) may be offered.
- Biologic agents that are used include romidepsin and vorinostat.

Prognosis

The treatment of mycosis fungoides is not totally satisfactory, and in most cases a cure cannot be attained. The 5-year survival rate is from 85% to 90%.

Fig. 8.14. Patient with scaly patches and plaques of mycosis fungoides characterized by variable-sized scales and induration. The ink marking is the site of a planned punch biopsy.

Fig. 8.15. Patient with large plaques with subtle scale that had been present for 8 years. The pelvic girdle is a common location for early lesions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 8.16. Patient with pigmented mycosis fungoides with patches, plaques, and even two tumors, which are ulcerated.

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Chapter 9
Scaly Disorders

Key Term
Two feet–one hand syndrome

Scaly disorders are a heterogeneous presentation of skin diseases that primarily manifest with scale. This group includes inherited disorders (e.g., ichthyosis vulgaris), acquired disorders (e.g., xerosis), and infections (e.g., tinea pedis).

IMPORTANT HISTORY QUESTIONS

How long has the lesion(s) been present?

This is an important question to distinguish between a genodermatosis, such as ichthyosis vulgaris, from an acquired disorder, such as xerosis.

Have you had a similar lesion(s) in the past?

Some disorders, such as tinea pedis, tend to be one-time events, whereas tinea versicolor and xerosis are often characterized by episodic disease.

Do any of your immediate relatives have a similar disorder?

A "yes" answer indicates a possible genodermatosis; however, the answer has to be weighed against the possibility that the disorder is acquired as an infection from an immediate family member. For example, it is not uncommon for multiple family members to have tinea versicolor or tinea pedis.

How are you treating your skin condition?

Many patients use home-based, over-the-counter (OTC), or prescription remedies that can alter the appearance of the condition. Some home remedies may actually make the condition worse.

Has the skin condition ever been biopsied?

This of course could be helpful in regard to any of the conditions in this chapter; however, not all of the disorders have specific histologic findings. If there is a history of previous biopsies, consider having the biopsy reviewed by a dermatopathologist or a pathologist with expertise in this area because subtle clues to the diagnosis may be missed in scaly disorders.

Are you taking any medications?

This is an important question because some disorders, such as palmoplantar keratodermas, xerosis, and ichthyoses, may be produced by medications.

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the lesions?

Some of the cutaneous disorders demonstrate a characteristic location. For example, ichthyosis vulgaris involves the extensor surfaces of the extremities and spares the intertriginous areas. Tinea pedis and palmoplantar keratodermas are most commonly restricted to palmoplantar areas. Tinea versicolor tends to affect the trunk and usually but not always spares the face.

Are the nails normal or abnormal?

Nail findings may suggest a diagnosis. For example, in tinea pedis there is often accompanying fungal nail disease, whereas in palmoplantar keratodermas, the nails are often unaffected.

What is the color of the scale?

The majority of the scaly disorders demonstrate white scale; however, there are important exceptions, notably tinea versicolor, which has a fine brownish scale, and ichthyosis vulgaris, which has a yellowish-brown scale. Thickened keratin on the palms and soles may have a yellow-brown hue, which may be a clue to an inherited palmoplantar keratoderma.

What are the size and shape of the scale?

Not all scale has the same appearance. For example, tinea versicolor has a fine branlike scale, whereas ichthyosis vulgaris often has a larger rhomboidal scale. Xerosis demonstrates small white scale, which may crack.

Tinea (Pityriasis) Versicolor ICD10 code B36.0

Pathogenesis

Tinea versicolor is a common superficial fungal infection produced by the yeast *Malassezia furfur* and other species in this genus. This yeast is a normal part of the cutaneous microflora; however, under certain conditions, it will convert to the mixed hyphal and yeast form, which produces clinical disease. *Malassezia* spp. require lipids for growth and are not dermatophytes. Tinea versicolor is more common in warm humid climates, where it may affect up to 50% of adults.

Clinical Features

- It typically affects adolescents and young adults.
- Tinea versicolor is usually asymptomatic, although occasional patients may complain of a burning sensation or mild pruritus.
- Primary lesions are tan or fawn-colored macules that may coalesce into large patches (Figs. 9.1 and 9.2).
- Close inspection reveals a fine branlike scale that covers the entire macule or patch.
- The affected areas usually display a truncal distribution, although extension to acral areas may occur.
- Hypopigmented macules (Fig. 9.3), due to the production of biochemical products by the yeast that interfere with melanin synthesis and packaging, is a less common presentation. This decrease in pigmentation is more noticeable when the patient has darker skin or is well tanned.

Diagnosis

- A clinical presentation of a predominantly truncal eruption with fine scale that is fawn-colored or hypopigmented is usually diagnostic.
- A potassium hydroxide (KOH) examination can be done by scraping or using clear tape. The finding of an admixture of yeast and short hyphae (so-called spaghetti and meatballs) is diagnostic (Figs. 2.8 and 9.4).
- Rare or atypical cases may require a shave or punch biopsy. The yeast and short hyphae can be seen in the stratum corneum on routine H&E stain; however, special stains make it easier for the pathologist or dermatopathologist to identify the organisms.
- Culture can be done on scrapings but is not recommended because most laboratories have little or no experience preparing special lipid-augmented (usually olive oil) media.

Treatment

- Limited tinea versicolor is best and most easily treated with any of the topical imidazole antifungal creams, including bifonazole, clotrimazole, econazole, ketoconazole, oxiconazole, and tioconazole. There are no differences in efficacy among these agents; price and availability are the driving factors behind the choice. These are typically applied twice per day for 2 to 4 weeks.
- Larger areas of tinea versicolor are better treated with liquid preparations, such as flutrimazole shampoo and ketoconazole shampoo; these are typically applied for 5 minutes before rinsing. Treatment typically lasts 2 to 4 weeks. Topical 2.5% selenium sulfide can also be used in a similar fashion; however, it can be a significant irritant and is not preferred.
- Itraconazole, 200 mg/day for 7 days, or a single dose of 400 mg, has been used effectively and has an expected cure rate of over 80%. Another oral alternative is fluconazole, which is generally used in a dose of 300 mg once weekly for 2 weeks.

Clinical Course

In humid climates, in patients prone to tinea versicolor, the recurrence rate is almost 50% at 6 months after therapy. In one double-blind, placebo-controlled study, itraconazole prophylaxis, using a regimen of 200 mg taken orally each month for 6 months, reduced the relapse rate to 12%.

Fig. 9.1. Patient with sharply defined, asymptomatic, fawn-colored patches on the trunk. Note involvement of the navel, an area that is frequently affected.

Fig. 9.2. Patient with large confluent plaques of tinea versicolor presenting on the trunk. Once again, note involvement of the naval area.

Fig. 9.3. Patient with hypopigmented tinea versicolor presenting as sharply hypopigmented plaques with fine scale on a patient with a darker skin type. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

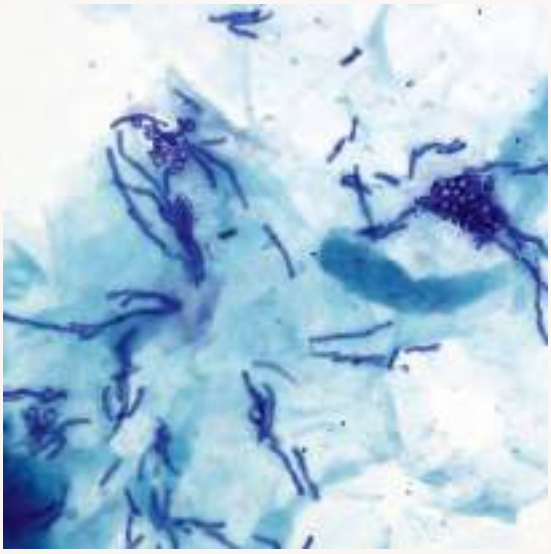

Fig. 9.4. Tape preparation of a sample stained with methylene blue demonstrating diagnostic short hyphae and clusters of yeast (400×).

Acquired Ichthyosis Vulgaris (Ichthyosis Acquisita) ICD10 code L85.0

Drug-Induced Ichthyosis
- Acitretin
- Cholesterol-lowering drugs (e.g., pravastatin)
- Clofazimine
- Hydroxyurea
- Kava
- Lithium
- Nicotinic acid

Pathogenesis

Acquired ichthyosis is associated with a number of underlying conditions, including malignancies (particularly Hodgkin lymphoma), sarcoidosis, graft-versus-host disease, lupus erythematosus, and some medications (see box). This disorder of keratinization usually parallels the course of the underlying disease process. In some cases, the ichthyosiform changes are the presenting complaint.

Clinical Features

- As the name implies, acquired ichthyosis is not present at birth; most cases occur in adults, including the elderly.
- In contrast to ichthyosis vulgaris, acquired ichthyosis is not associated with atopic dermatitis, and increased palmar and plantar skin markings are usually not present.
- The primary lesion is a bran-like, fine, lightly scaling lesion in areas other than the extensor limbs; lesions typically spare the flexures and face.
- The legs and arms typically demonstrate larger brownish or brownish-yellow rhomboidal scales, which may demonstrate a subtle tendency to turn out at the edges (Figs. 9.5 and 9.6).
- Follicular hyperkeratosis may be prominent in some cases (Fig. 9.7).

Diagnosis

- The diagnosis is established by the acquired development of large rhomboidal scales of the extremities and absence of a family history of a similar disorder.
- Once a diagnosis of acquired ichthyosis is suspected, the patient needs a complete review of systems, review of medications, and complete physical examination to identify a systemic cause.
- In most patients in whom an immediate cause is not identified, a chest x-ray is recommended to screen for sarcoidosis or malignancy.
- In some cases, a 3- or 4-mm punch biopsy can be helpful in establishing the diagnosis. For example, the sarcoidal granulomas can sometimes be identified in the underlying dermis in sarcoidal ichthyosis. Another example is the patient shown in Fig. 9.9, whose biopsy identified foreign material in macrophages consistent with a degradation product of clofazimine.

Systematic Causes of Ichthyosis
- Dermatomyositis
- Graft-versus-host disease
- HIV infection
- Leprosy
- Malignancy
- Sarcoidosis
- Systemic lupus erythematosus
- Thyroid disease

Treatment

- The disorder is cured by removing the offending drug or treating the primary disease that is producing the altered keratinization.
- Immediate improvement can be obtained by using emollients, especially those that contain ammonium or sodium lactate.

Clinical Course

The condition typically gradually resolves over a period of several weeks following withdrawal of the drug.

Fig. 9.5. Acquired ichthyosis vulgaris. This patient had sarcoidosis and large, brownish, rhomboidal scale on the anterior legs, indistinguishable from the genetic form of ichthyosis vulgaris. In some cases, a biopsy taken from this area will demonstrate underlying sarcoidal granulomas. (From the Walter Reed Army Medical Center Collection, Washington, DC.)

Fig. 9.6. Patient with large brownish rhomboidal scales on the arms secondary to clofazimine. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 9.7. Close-up of lesions of a patient with acquired ichthyosis vulgaris secondary to HIV infection. Note the presence of follicular hyperkeratosis, a feature that is variably present. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Tinea Pedis and Tinea Manuum

ICD10 code B35.3 (tinea pedis) and B35.2 (tinea manuum)

Pathogenesis

- The term *athlete's foot,* tinea pedis, is applied to dermatophyte infections of the feet. In the United States, it is the most common superficial fungal infection. Tinea manuum refers to dermatophyte infections of the hand; it is frequently associated with tinea pedis. The most common causative organisms are *Trichophyton rubrum,* followed by *Trichophyton mentagrophytes* and *Epidermophyton floccosum*. Most infections are acquired from other people with a fungal infection.

Clinical Features

- Hyperkeratotic variants of tinea pedis are characterized by diffuse white and yellowish scale that is usually confined to the bottom of the feet (so-called moccasin-like forms).
- Hyperkeratotic moccasin-like forms are often asymptomatic; many patients believe they simply have dry feet.
- It may affect one foot (Fig. 9.8) but usually affects both feet (Fig. 9.9).
- Interdigital variants of tinea pedis appear confined to the interdigital spaces. The hyperkeratosis may demonstrate distinct rings of scale or aggregates of scale (Fig. 9.10).
- Hyperkeratotic variants of tinea manuum present as diffuse scaling of the palms, similar in appearance to the moccasin sandal form on feet.
- Most cases of tinea manuum are unilateral and are associated with bilateral infection of the feet, producing what is known as the *two feet–one hand syndrome* (Fig. 9.11).

Diagnosis

- In some cases, the presence of a unilateral scaly hand or foot, interdigital scaly space, or two feet–one hand syndrome is strongly suggestive of a dermatophyte infection.
- The presence of a thickened nail or nails is a physical finding supportive of a dermatophyte infection.
- The diagnosis is ultimately dependent on identifying a fungus by KOH (Figs. 2.3 to 2.7) or fungal culture.
- Rare cases may require a biopsy and fungal stains.

Clotrimazole-Betamethasone Dipropionate?
In a large study of 176 patients with tinea pedis, the mycologic cure rate after 4 weeks of therapy was 73% for topical naftifine and only 45% for topical clotrimazole-betamethasone dipropionate. The naftifine-treated group also had a lower relapse rate.

Treatment

- Treatment depends upon severity, extent of disease, and cost factors. Options include topical imidazole creams (e.g., clotrimazole, miconazole, econazole, ketoconazole, luliconazole, sertaconazole, sulconazole), topical allylamines (e.g., butenafine, naftifine, terbinafine), or topical ciclopirox olamine. In a meta-analysis of 14 topical treatments for dermatophytes, there was no significant difference in the cure rate among the antifungals, although there was a decreased recurrence rate when allylamines were used.
- In severe cases, particularly if there is any suggestion of nail involvement, oral itraconazole or oral terbinafine is the treatment of choice. There is some evidence that oral terbinafine is more effective.

Fig. 9.8. Patient with tinea pedis presenting as a unilateral yellow and white scale. Unilateral presentations are strongly suggestive of a fungal infection.

Fig. 9.9. Tinea pedis presenting as bilateral, diffuse, hyperkeratotic white and yellowish scale (moccasin sandal feet). This variant can be difficult to differentiate from dry feet.

Fig. 9.10. Interdigital hyperkeratotic tinea pedis. As seen here, this pattern almost always affects the space around the fourth toe and is most likely to spare the interdigital space next to the big toe.

Fig. 9.11. Tinea manuum presenting as unilateral hyperkeratosis. This presentation, when combined with involvement of both feet (two feet–one hand syndrome), is clinically diagnostic.

Xerosis (Asteatosis, Dry Skin) ICD10 code L85.3

Drug-Induced Xerosis
- Acitretin
- Anti–tumor necrosis factor inhibitors (e.g., infliximab)
- Cimetidine
- Epidermal growth factor inhibitors (e.g., cetuximab)
- Hydroxyurea
- Isotretinoin

Pathogenesis

Xerosis, which is more commonly known as dry skin, is arguably the most common skin condition in some parts of the world, especially in the elderly. As individuals age, the epidermis becomes thinner, has lower levels of its most important humectant, hyaluronic acid, and loses intercellular lipids. The condition is most often seen and is most severe in individuals with a hereditary predisposition who are exposed to dry climates or topical irritants, such as harsh soaps. Xerosis is most common during the winter months in cold, dry climates when homes are being heated. Less commonly, xerosis may be induced by some drugs (see box).

Systemic Causes of Xerosis
- Diabetes mellitus
- HIV infection
- Hypothyroidism
- Malignancy
- Renal failure
- Sjögren syndrome

Clinical Features

- The primary lesion is a fine white scale, with varying degrees of severity, producing a skin surface that is dry to the touch (Fig. 9.12).
- Pruritus is variably present and is the complaint that is most likely to present in the urgent care setting.
- In severe cases, the dry flakes will develop focal redness.
- A subset of patients may even develop erythema or fissuring in severe cases. The term *erythema craquelé* is sometimes used for these cases (Fig. 9.13).
- Some cases may demonstrate variable follicular hyperkeratosis, which can be prominent (Fig. 9.14).
- Xerosis is often most severe on the hands and feet, where there can be marked hyperkeratosis (Fig. 9.15).

Diagnosis

- Xerosis is such a common clinical disorder that the diagnosis is usually but not always evident to the patient and health care provider, and the diagnosis can be made on clinical grounds.
- Patients who present with acute onset of significant widespread xerosis should be queried regarding their medications and symptoms or physical findings that could support a systemic cause.
- Rare cases may require biopsies; however, the histologic findings are not specific and, at best, are only supportive of the diagnosis.

Treatment

- Treatment with an emollient is the cornerstone of initial therapy, and many emollients are helpful. However, the best immediate results are obtained by using emollients containing a strong humectant, such as urea.
- The best long-term strategy for treatment of chronic xerosis is to use emollients that contain sodium lactate or ammonium lactate. These emollients often have a slightly unpleasant odor and may burn if there are fissures.
- Switch the patient to a synthetic soap, such as Dove.
- Xerotic dry heels may also be treated with manual débridement, such as a pumice stone.

Fig. 9.12. Severe xerosis on the arm of an elderly man. Several of the thicker lesions are actinic keratoses, and it was clinically difficult to differentiate between the two processes.

Fig. 9.13. Patient with erythema craquelé. There is moderately severe xerosis on the lateral trunk, with fine fissures and variable erythema.

Fig. 9.14. This man presented for the acute development of xerosis, with prominent follicular hyperkeratosis. A clinical history and laboratory evaluation identified profound hypothyroidism as the cause.

Fig. 9.15. Patient with mildly xerotic heels, one of the most common cutaneous afflictions. Prominence at the lateral edge of the heel is a physical finding that is a clue to the diagnosis. Severe cases frequently demonstrate cracking and fissuring.

Kwashiorkor ICD10 code E40

Pathogenesis

Kwashiorkor is a nutritional deficiency caused by a deficiency of dietary protein. This results in impaired fluid recovery in the lymphatic system and causes edema. It is primarily seen in those in underdeveloped countries during times of famine. In developed countries, it can be seen in chronic malabsorption disorders (e.g., cystic fibrosis), with fad diets, or with children's medical diets that exclude milk (e.g., a rice milk diet to treat atopic dermatitis).

Clinical Features

- Pitting edema is most prominent in the ankles and feet.
- The abdomen is distended.
- Infants often demonstrate irritability and may also develop anorexia.
- There is a crusting desquamating dermatitis with what appears to be attached scale that flakes. This is referred to as the flaky paint sign or enamel paint sign; it is very distinctive (Figs. 9.16 and 9.17).
- Patients who have alternating periods of improved protein nutrition may develop bands of different hair color, referred to as the flag sign (Fig. 9.18), or the patient may also demonstrate thinning of the hair.
- Other signs of nutritional deficiencies may also be present (e.g., marasmus, pellagra).

Diagnosis

- Kwashiorkor should be suspected in any infant on a diet that excludes milk. There are numerous examples in developed countries of nontraditional fad diets that have produced protein deficiency in infants.
- Retained fluid with pitting edema is the defining sign of kwashiorkor and should be looked for in infants on nontraditional diets. Remember that the infant may appear to have a normal growth curve because the retained fluid may mask true growth failure.
- A skin examination will usually demonstrate a characteristic scaly disorder of keratinization manifesting as flaky paint that peels, leaving what may appear to be normal skin.
- In addition to thinning of the hair, a subset of patients may demonstrate alternating bands of hair color, which is very distinctive.
- A serum total protein will usually demonstrate depressed values.

Treatment

- The treatment of choice is the gradual reintroduction of milk products or other proteins to the diet. However, introduction of large amounts of protein into the diet may overwhelm the capacity of the liver to process the protein and may even result in death.
- The scaly dermatitis can be treated with emollients, but this is not necessary because the scale will resolve with an improved diet.

Clinical Course

With a proper diet, the infant will fully recover, without permanent sequelae. In one study, untreated kwashiorkor had a mortality rate of 19%.

Fig. 9.16. A 5-month-old female infant on a milk-free diet presenting with edema of the lower extremities, hepatomegaly, and characteristic sharply demarcated scale that peels. The infant had maintained a normal weight for her age. (From the William Weston Collection, Aurora, CO.)

Fig. 9.17. Close-up demonstrating the classic enamel paint sign. (From the William Weston Collection, Aurora, CO.)

Fig. 9.18. Alternating bands of hair color (flag sign) in a patient with kwashiorkor. (From the William Weston Collection, Aurora, CO.)

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Chapter 10
Dermatitis (Eczematoid Reactions)

Key Terms

Seborrheic Dermatitis
Cradle cap
Dandruff
Sebopsoriasis
Seborrhea petaloides

Dermatitis, a term interchangeable with the term *eczema*, represents the most common cause of skin-related visits to health care providers in the United States. Histologically, dermatitis is characterized by variable epidermal edema (spongiosis), with inflammatory cells infiltrating the epidermis and dermis. Clinically, dermatitis presents with variable erythema and edema; it can appear to weep or even vesiculate. In many cases, a specific diagnosis cannot be made without clinical data, so the following questions are important to ask of all persons with possible dermatitis.

IMPORTANT HISTORY QUESTIONS

How long has the dermatitis (rash) been present?

Attempt to ascertain if the condition is acute or chronic. Atopic dermatitis, nummular dermatitis, and seborrheic dermatitis are often chronic conditions, albeit with waxing and waning moments. Allergic contact dermatitis, id reactions (autoeczematous eruptions), and eczematous drug eruptions are more likely to be acute in nature.

Have you had a similar rash in the past?

An affirmative answer favors repeated exposures to an allergen in allergic contact dermatitis, an exacerbation of a chronic dermatitis (e.g., atopic dermatitis), or repeated exposure to a drug in a drug-induced eczematous process.

Where did the rash start?

Ascertaining the point of initial involvement may provide an important clue in allergic contact dermatitis (ACD) or irritant contact dermatitis (ICD). Be suspicious of a low-grade allergic contact dermatitis when the condition begins on the thin skin of the eyelids.

Do any of your immediate relatives have eczema, asthma, or hay fever?

When multiple persons in a family have these conditions, an atopic diathesis is suggested. It is important to remember that many laypersons refer to atopic dermatitis as childhood eczema.

Do you have allergies or sensitivity to things that come into contact with your skin?

An affirmative response should prompt additional questioning about a specific allergen and allergic contact dermatitis, or it may again suggest an atopic diathesis; persons with atopy often describe their skin as being sensitive.

What sort of work do you do?

Occupational exposure to an irritant or allergen is an important question. For example, a 2001 study of 1200 health care workers identified an irritant or allergic hand dermatitis in more than one-third of participants.

Have you started any new medications in the past month?

Although eczematous drug eruptions represent just 1% to 4% of drug eruptions, the condition with discontinuation of the offending drug.

How are you treating the rash?

Many patients use home remedies, over-the-counter medications, or borrowed or inappropriate prescription medications that can worsen (or improve) dermatitis.

What else do you put on your skin, and what type of soap do you use?

Many patients use lye-based soaps that are irritants or heavily fragranced soaps that can cause an allergic dermatitis. Dermatitis will improve if synthetic soaps are used instead of harsh, lye-based soaps.

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the dermatitis?

Some types of dermatitis have characteristic patterns of involvement (e.g., flexural involvement in atopic dermatitis, involvement of the scalp, eyebrow, eyelid, and nasolabial folds in seborrheic dermatitis).

Is there a distinct pattern to the dermatitis?

Allergic contact dermatitis is initally sharply circumscribed and assumes linear configurations that begins after contact with the allergen. A sharply circumscribed edge, with central clearing, forming an annulus, should raise concern for a dermatophyte infection rather than a dermatitis.

Allergic Contact Dermatitis ICD10 code L23.0 to L23.9

Pathogenesis

Allergic contact dermatitis (ACD) is a delayed type hypersensitivity process (type IV reaction) that occurs when a low-molecular-weight antigen (hapten) is processed by antigen-presenting cells of the skin. These antigen-presenting cells then travel to the lymph nodes and promote expansion of clonal effector T-cells. The T-cells traverse back to the skin to produce inflammation. The memory T-cells serve to facilitate a quicker immune response upon rechallenge. This process of initial sensitization requires 5 to 21 days to foment, but, upon rechallenge, the elicitation of a second response can occur in 24 to 72 hours.

Clinical Features

- ACD occurs about 5 to 21 days after exposure if the patient is not already sensitized to the antigen or 1 to 3 days after re-exposure if the patient is already sensitized.
- Acute ACD is intensely pruritic and causes erythema and variable edema. Allergic dermatitis is the most likely of all forms of dermatitis to present with blisters (see Chapter 11).
- ACD often demonstrates peculiar configurations, reflecting the points of contact; hence, it may produce linear (Figs. 10.1 and 10.2) or round dermatitis (Figs. 10.3 and 10.4).
- In severe ACD the dermatitis can spread past the point of contact (Fig. 10.5).
- ACD often presents on the thin skin of the eyelids (Fig. 10.6), neck (Fig. 10.7), and web spaces between the fingers.

Diagnosis

- Elicitation of a detailed exposure history is critical in ACD. The exposure period of interest is usually about 1 to 3 days but can be as long as 3 weeks with an initial episode.
- A skin biopsy is not diagnostic but may exclude other diseases that can mimic ACD.
- Patients with exposure to multiple potential allergens, such as a woman with facial dermatitis who uses facial soaps, creams, and other cosmetics, may require all topical preparations be discontinued. One single agent is then added back each week to identify the agent that produced the ACD.
- Some cases may require patch testing by a dermatologist to identify the offending agent or ingredients.

Treatment

"Rule of 78" for Poison Ivy

For ACD caused by poison ivy, it is often useful to prescribe 78 5-mg tablets of prednisone. Then ask the patient to take 12 tablets the first day, 11 the second day, 10 the third day, and so on, until all the tablets have been taken.

- Mild cases of ACD may respond simply to withdrawal but can also be treated with a mild steroid (e.g., 1% hydrocortisone) or moderate steroid (e.g., 0.1% triamcinolone), applied bid.
- Ointments are a useful choice for ACD because these agents do not contain preservatives that could be involved in the process. Hydrocortisone, 1% ointment, is useful for eyelid dermatitis.
- Severe cases of ACD, especially those on thicker skin, may require potent topical corticosteroids applied bid (e.g., fluocinonide, clobetasol).
- Oral antihistamines (e.g., cetirizine, hydroxyzine) are used for relief of pruritus and provide sedation at night.
- Severe or generalized cases may require oral prednisone (40–100 mg PO qd) for 5 to 7 days. Some haptens, such as those in poison ivy, bind irreversibly to the skin, and new lesions may occur for up to 3 weeks. Prednisone may need to be continued for up to 3 weeks in these cases (see "Rule of 78" inset).
- Skin barrier creams (e.g., Stokogard, Hollister Moisture Barrier, Hydropel, Ivy Shield) are partially effective in preventing ACD to poison ivy.

Fig. 10.1. Patient with allergic contact dermatitis to elastin in socks. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.2. Patient with allergic contact dermatitis to elastin in waistband of underwear. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Contact Dermatitis to Elastic

As demonstrated by the two patients shown in Figs. 10.1 and 10.2, ACD to elastic in clothing can occur. In some cases, it is due to compounds called rubber accelerators that are used during production of the elastic. In other cases, it is due to chemical changes from bleach. In patients with this type of reaction, switching to new clothing and not using bleach avoids the problem.

Fig. 10.3. Patient with eyelid dermatitis demonstrating a line of demarcation to the erythema. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.4. Area of eyelid dermatitis corresponds to goggles worn during swimming. This patient was allergic to one of the rubber accelerators. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.5. Patient with allergic contact dermatitis due to the nickel found in the metal snap of the jeans. More than 14% of all adults are allergic to nickel. Note that the dermatitis has spread past the point of contact.

Common Causes of Allergic Contact Dermatitis

- Plant allergens—57% of all adults in the United States are allergic to rhus antigen, which is found in poison ivy, poison oak, and poison sumac. It is also found in a variety of related plants (e.g., mango, cashew nut trees)
- Nickel—14% of US adults are allergic to nickel. They can become allergic to other metals, but this is uncommon. It is worth noting that the incidence of ACD to gold has been increasing.
- Formaldehyde and formaldehyde releasers (quaternium-15)
- Neomycin—9% of US adults
- Rubber (thiuram, carba mix)
- Fragrances—8% of US adults

Fig. 10.6. A, Patient with acute onset of markedly pruritic dermatitis. B, The culprit turned out be topical vitamin E. Despite consumer perception, so-called natural products may produce allergic reactions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Eyelid Dermatitis

Figs. 10.3 and 10.4 demonstrate an important physical finding—namely, involvement of the eyelids. Because the eyelid skin is so thin, it is frequently involved in ACD. It is not uncommon for low-grade ACD to be confined to the eyelids. In a large study of 203 patients with eyelid dermatitis, ACD was the cause in 74% of cases. The remaining patients usually had atopic dermatitis, seborrheic dermatitis, psoriasis, dry eyes, dermatomyositis, and irritant contact dermatitis.

Guin JD: Eyelid dermatitis: experience in 203 patients, *J Am Acad Dermatol* 47:755-765, 2002.

Fig. 10.7. Patient with oozing dermatitis of the thin skin of the anterior neck due to topical neomycin, one of the most common causes of allergic contact dermatitis. (From the Joanna Burch Collection, Aurora, CO.)

Irritant Contact Dermatitis ICD10 code L23.0 to L23.9

Pathogenesis

In contrast to ACD, irritant contact dermatitis (ICD) is not mediated by an immunologic cascade. Instead, ICD is produced by direct toxic injury to the skin. ICD is affected by the nature of the toxic substance, the degree and duration of exposure, and individual skin susceptibility. Some skin sites may be more susceptible, elderly skin is more susceptible, and repeated water exposure damages the barrier function of the skin, making it more susceptible to irritants. Most ICD is caused by soap (e.g., bath soap, dishwashing soap), cleaning products (e.g., window cleaner, bathtub cleaner), alcohols in medications and cosmetics, and glues, cements, and deodorants. ICD can also be caused by minor physical trauma such as exposure to fiberglass, sand, cement, and rough paper. ICD is four- to five-fold more common than ACD.

Clinical Features

- Strong irritants, such as strong acids, produce an immediate burning or stinging with exposure, followed by erythema, edema, and even blisters or ulcerations. Strong bases (e.g. lye) may not produce the same sensory changes but can be just as damaging to the skin.
- Mild irritants, such as soaps, may produce dermatitis through cumulative insult over days or weeks.
- In contrast to ACD, irritant dermatitis is limited to exposed skin, and new lesions do not continue to develop after exposure is terminated.

Diagnosis

- Acute ICD may be self-evident because the patient may observe an immediate and direct relationship to an exposure (Fig. 10.8). Acute ICD follows points of contact with the skin (Figs. 10.9 and 10.10).
- Low-grade and chronic ICD can be difficult to distinguish from other causes of dermatitis; the diagnosis may be established only with a careful exposure history and physical examination (Fig. 10.11).
- In general, biopsy of ICD is not helpful because only nonspecific features of spongiotic dermatitis are observed, but it may be useful in excluding other forms of dermatitis.
- Patch testing may be used to exclude ACD. Provocative use testing can be used, with application of the suspected irritant to a specific area of skin, only if the suspected substance is not excessively harmful. Do not use such testing with strong acids or strong bases.
- In many cases, the diagnosis of low-grade ICD depends on observed improvement with discontinuation of the suspected irritant.

Treatment

- The cornerstone of treatment for ICD is withdrawal of the offending agent, with protection from all irritants (e.g., gloves for irritant hand dermatitis). Because the effects of irritants are additive, all irritants should be avoided.
- The most common irritants are bath soaps, so instruction on proper bathing is important. Dove Sensitive Skin Body Wash, Olay Sensitive Body Wash, Aveeno Daily Moisturizing Body Wash, and Cetaphil skin-cleansing products are excellent choices when ICD is suspected.
- Severe irritant dermatitis (e.g., cantharone blister) is essentially a second-degree burn, and topical treatments are not helpful.
- Moisturizers should be recommended in cases of chronic irritant dermatitis, particularly those with ammonium lactate or sodium lactate, because these agents make the skin less susceptible to irritants. It may take 4 to 6 weeks of continued use to realize the effects of lactate-containing moisturizers.
- Mild to moderate potency topical corticosteroids may be of some benefit in chronic ICD.
- Patients should be cautioned that once the skin is irritated, normal barrier function may not return for 4 weeks and, during this time, the skin is more susceptible to all irritants.

Fig. 10.8. Patient with acute, severe, irritant dermatitis of the axillae due to a topical epilating agent. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.9. Patient with acute severe irritant dermatitis of the face due to topical epilating agent. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.10. Patient with papular irritant dermatitis caused by exposure to fiberglass that followed a weekend of insulating an attic. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.11. Chronic, low-grade irritant dermatitis due to repeated exposure to soaps in a patient who worked as a car washer. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Atopic Dermatitis (Childhood Eczema) ICD10 code L20

GENETIC DISORDER WITH EXTERNAL EXACERBANTS

Pathogenesis

The precise incidence of atopy is unknown, but current evidence suggests that 9% to 20% of all individuals in the United States have an atopic diathesis. Atopy is inherited, and 70% of persons with atopic dermatitis (AD) have a family history of asthma, allergic rhinitis, and/or AD. Evidence suggests that an atopic diathesis is determined by the varied expression of 20 or more genes and is also affected by various environmental stimuli. The immunologic aberrations of atopy are poorly understood, but patients with AD manifest an increased release of histamine from mast cells and basophils, blood and tissue eosinophilia, and exaggerated immunoglobulin E (IgE) response mechanisms. Persons with atopy can be exquisitely sensitive to pruritic stimuli and have depressed cell-mediated immunity. Recent studies have linked some cases of AD to mutations in filaggrin, a protein important in the barrier function of the stratum corneum of the epidermis.

Clinical Features

- Most cases of AD present in childhood—60% present in the first year of life, and 90% present by the age of 5 years.
- During the infantile phase (2 months–2 years), patients demonstrate marked pruritus, excoriations, and diffuse dermatitis that usually involves the head, portions of the trunk, and diaper area (Figs. 10.12–10.14). Half of these patients will clear by the age of 3 years.
- During the childhood phase (3–11 years), lichenified plaques are common on the wrists, ankles, buttocks, and antecubital and popliteal fossae.
- During the adolescent phase (12–20 years), lichenified plaques are common on the face, neck, upper arms, back, and flexures (Figs. 10.15 and 10.16).
- AD persists in adulthood in only 10% of patients, but, when this occurs, the disease presents in much the same way as in the adolescent phase (Figs. 10.17–10.19).
- Adult patients with AD may experience only xerosis but are also more likely to develop chronic hand dermatitis.
- Other physical findings common in patients with AD include xerosis (see Chapter 9), keratosis pilaris, ichthyosis vulgaris, Dennie-Morgan lines (linear transverse folds below the lower eyelids), pityriasis alba (see Chapter 27), and transverse nasal creases (the so-called allergic salute).
- Patients with AD are more likely to harbor *Staphylococcus aureus* (~64% in one study) and are also susceptible to viral superinfection of inflamed skin (e.g., herpes simplex virus [HSV]—eczema herpeticum, vaccinia—eczema vaccinatum, or coxsackievirus A16—eczema coxsackium).
- In a large study of over 2500 children, AD was most often exacerbated by sweating from exercise, hot weather (possibly also because of sweating), and fabrics (especially wool).

Diagnosis

- A careful personal and family history and review of past skin disease are important.
- Unexplained pruritic dermatitis occurring in a child should prompt consideration of AD.
- AD cannot be diagnosed with any single laboratory test, but often patients with AD have an elevated serum IgE level and, possibly, peripheral eosinophilia. A raised total or allergen-specific IgE level was found in 74% of 1097 children with AD.
- A skin biopsy is usually nondiagnostic but may exclude other diseases that can mimic AD.
- A proposed diagnostic scheme for AD requires three of four major criteria to be present:
  1. Pruritus—some authorities believe that this is the principal problem (the itch that rashes). In one study, 52% of patients with AD reported pruritus, even without skin lesions, whereas only 6% of a matched control population reported pruritus.
  2. Typical morphology and distribution for age group (e.g., flexural areas)
  3. Chronic or chronically relapsing dermatitis
  4. Personal or family history of atopy (e.g., allergic rhinitis, asthma, AD)

Treatment

- Removal of cutaneous irritants (soaps, wool) improves AD. Dove Sensitive Skin Body Wash, Olay Sensitive Body Wash, Aveeno Daily Moisturizing Body Wash, and Cetaphil skin-cleansing products are excellent choices for persons with AD. Fragrance-free laundry detergents and fabric softeners can be helpful but generally are not as important as gentle skin bathing choices.
- Food elimination diets are controversial. One study of 160 patients with AD has reported that 28% of individuals experienced exacerbations of AD when challenged with certain foods. The foods most often involved in exacerbations included milk, eggs, nuts, soy, wheat, and seafood. Note that food elimination diets need to proceed with extreme caution because there have been reports of such diets producing malnutrition in children (see discussion of kwashiorkor in Chapter 9). Consultation with a dietician is an option.
- Generous and liberal lubrication is critical. Ammonium lactate– or sodium lactate–containing moisturizers (e.g., AmLactin, Lac-Hydrin) are effective, if tolerated, but these agents may produce a burning sensation. Eucerine Smoothing Repair and Eucerin Intensive Repair, which also contain urea, are lotions that contain sodium lactate in weaker

Fig. 10.12. Infant with atopic dermatitis demonstrating eczematoid dermatitis. Note the active excoriation and white dermatographism. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.13. Infant with chronic atopic dermatitis. Note the presence of hyperpigmented and hypopigmented areas. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.14. Infant with atopic dermatitis demonstrating extensive scale, a common finding in atopic dermatitis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.15. Adolescent with atopic dermatitis of the flexural area of the neck. Some of the lesions demonstrate round configurations and resemble nummular dermatitis.

concentrations, and they are less likely to produce a burning sensation.

- Acutely inflamed or oozing skin may benefit from the application of open wet compresses. Some dermatologists use tap water, and others prefer a modified Burow solution (e.g., Domeboro).
- Topical corticosteroids are a mainstay of therapy for AD. The strength of the corticosteroid must to be tailored to the anatomic site involved and severity of disease. Mild disease may respond to 1% hydrocortisone cream, but more significant disease may require more potent topical corticosteroids, such as triamcinolone, fluocinonide, or even clobetasol for a short period. Severe AD may require corticosteroids under occlusion in conjunction with wet-dry wraps and/or with hospitalization.
- Oral antihistamines (e.g., cetirizine, hydroxyzine, diphenhydramine) are often used to decrease pruritus and provide sedation. At least two studies have demonstrated hydroxyzine to be effective in reducing pruritus in AD. One study has demonstrated that 0.7 mg/kg tid of hydroxyzine was as effective as 1.4 mg/kg tid in reducing the pruritus in children, with lesser sedation. Children or infants with severe AD not only keep themselves awake but drain the parent's energy as well through familial sleep deprivation.
- Rare patients may require short-term oral corticosteroids for severe outbreaks. This should be avoided, if possible, due to the young ages of typical patients with AD and chronicity of the disease.
- Secondary infections, usually due to *S. aureus,* should be treated with appropriate oral antibiotics (e.g., cephalexin, dicloxacillin). In a study of 306 children with AD, 64% of patients were colonized with *S. aureus*. Clinical and experimental studies have supported the concept that topical steroids plus antistaphylococcal antibiotic therapy is more effective than topical steroids alone.
- Bleach baths may be effective in controlling staphylococcal infections and may even be antipruritic. However, the bleach bath must be dilute—½ cup of unscented household bleach in a full tub of water, approximately 1 tsp/gallon). Soaks should last 5 to 10 minutes. Explain to parents that the desired concentration is the same as that of pool water, and too much bleach can cause an irritant dermatitis.
- Topical tacrolimus and topical pimecrolimus can be used as alternatives for many patients, but both carry a black box warning with regard to use in patients younger than 2 years.

Fig. 10.16. Classic atopic dermatitis in an adolescent involving both antecubital fossae. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.17. Man with flexural atopic dermatitis demonstrating excoriations and yellow crust due to secondary staphylococcal infection. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.18. Flexural atopic dermatitis in an adult demonstrating secondary linear excoriation. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.19. Patient with atopic dermatitis of the sacral area demonstrating thick skin, with increased skin markings indicating secondary lichenification. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Diaper Dermatitis ICD10 code L22

Pathogenesis

The pathogenesis of diaper dermatitis (DD) is not fully understood, but it is thought to be an irritant dermatitis, caused by urine and feces in contact with the skin. DD appears to be more common in patients with AD, likely because of an impaired epidermal barrier. Multivariate analyses of children in the United Kingdom have revealed the presence of oral candidiasis, a low frequency of diaper changes, and diarrhea to be significant associations. Older texts have noted that about 20% of all infants will develop DD at some time during their first 2 years of life.

Clinical Features

- By definition, DD occurs in infants and young children who wear diapers, but adult cases can be observed in those who are infirm.
- The clinical presentation varies from mild erythema due to chafing to eczematous reactions with variable scale and even shallow erosions (Figs. 10.20–10.23).
- Mild cases often affect the inguinal skin but may spare the deep fold itself, where urine and feces do not actually touch skin.
- Cases associated with diarrhea may demonstrate a perianal prominence.
- Secondary candidiasis is present in some cases and may be associated with flexural accentuation and characteristic satellite pustules, common in candidiasis.

Diagnosis

Differential Diagnosis

- Allergic contact dermatitis (Fig. 10.24)
- Atopic dermatitis
- Candidiasis
- Diaper dermatitis (irritant)
- Langerhans cell histiocytosis
- Seborrheic dermatitis
- Psoriasis

- In most cases, the diagnosis of DD is clear to the parents and health care provider.
- In cases with severe erythema (a beefy red appearance), satellite pustules should suggest secondary candidiasis, and the oral cavity should be examined for thrush. Candidiasis can also be established through performance of a potassium hydroxide (KOH) prep or fungal culture.
- In cases of acute onset occurring in the diaper area, ACD must be excluded.
- In persistent cases, the differential diagnosis also includes psoriasis and Langerhans cell histiocytosis. A shave or punch biopsy may necessary to include or exclude these diagnostic possibilities.

Treatment

- The cornerstone of treatment is reducing prolonged and repeated contact with urine and feces. Studies have clearly shown that infrequent diaper changes and diarrhea are associated with DD. More frequent diaper changes represent an important treatment strategy. Some pediatric dermatologists recommend restricted fluid intake before bed to reduce wet contact during the sleeping hours.
- Emollients, especially greasy emollients such as petrolatum, can protect the skin from irritants.
- Associated candidiasis should be treated with topical nystatin or imidazole. Sulconazole is a particularly strong choice because it has also been shown to have antiinflammatory properties.
- Topical corticosteroids are not widely recommended because this is an occluded site, but, if such a strategy is needed, topical 1% hydrocortisone cream or ointment can be used.
- Some compounding pharmacies offer triple paste or butt paste, which is zinc oxide, hydrocortisone 1% cream, and nystatin cream in a 1 : 1 : 1 ratio.

Fig. 10.20. Infant with mild diaper dermatitis with accentuation in the inguinal fold, which is common in mild cases. (From the William Weston Collection, Aurora, CO.)

Fig. 10.21. Infant with severe diffuse diaper dermatitis. (From the William Weston Collection, Aurora, CO.)

Fig. 10.22. Infant with severe diffuse diaper dermatitis. The small red papules in the waistband area most likely represent miliaria rubra or, less likely, candidiasis. (From the William Weston Collection, Aurora, CO.)

Fig. 10.23. Infant with allergic contact dermatitis to Bag Balm mimicking diaper dermatitis. (From the William Weston Collection, Aurora, CO.)

Eczematous Drug Eruptions ICD10 code L27.0 or L27.1 (localized)

Pathogenesis

Common Drugs

- Calcium channel blockers
- Carbamazepine
- Gold
- Griseofulvin
- Phenytoin
- Piroxicam
- Sulfonamides
- Thiazide diuretics
- Vitamin K

Eczematous (spongiotic) drug eruptions are drug eruptions that resemble dermatitis (eczema). Eczematous drug eruptions account for just 1% to 4% of all drug eruptions but are an important cause to consider because the condition resolves with discontinuance. Like most eczematous processes, eczematous drug eruptions are mediated by a T cell–derived allergic response. A subset of eczematous drug eruptions also requires light exposure to produce a reaction (photoallergic drug eruptions). Notorious causes of photoallergic drug eruptions include calcium channel blockers (the primary cause in a large case-control study), hydrochlorothiazide, piroxicam, and griseofulvin (see Chapter 19). Localized eczematous drug eruptions may also be produced by injected medications.

Clinical Features

- Most eczematous drug eruptions are composed of papules and plaques, of varied size, that may erode or vesiculate. Individual lesions can be indistinguishable from those of ACD (Figs.10.24 and 10.25).
- Eczematous reactions confined to injection sites e.g., (heparin, interferon) develop 2 to 7 days after the injection. They consist of pruritic erythematous plaques that may vesiculate (Fig. 10.26).
- Photoallergic drug-induced dermatitis manifests as an eczematous process confined to sun-exposed areas (see Chapter 19).
- Pityriasis rosea–like or plaquelike drug eruptions present as one or more well-defined plaques.
- By distribution and morphology, eczematous reactions can mimic other forms of dermatitis, such as AD (Fig. 10.27) or nummular dermatitis.

Diagnosis

- The relationship of medication use to the onset of dermatitis is an important observation because eczematous drug eruptions usually develop 1 to 14 days after starting a drug. However, there are exceptions to this rule, and some patients can develop eczematous drug eruptions from drugs that they have used for many years.
- The absence of another identifiable cause is also important because, if the patient has a known history of AD, nummular dermatitis, or any other well-documented cause of dermatitis, this may affect the likelihood of an eczematous drug eruption.
- Pruritic dermatitis at the site of an injection is often a localized eczematous drug eruption.
- A skin biopsy is not typically diagnostic but can be useful in ruling out other causes of dermatitis.
- A complete blood count may reveal peripheral eosinophilia. Although this may be supportive evidence of a drug-induced hypersensitivity process, one must recognize that a drug-induced process may be present with peripheral eosinophilia and that other causes of peripheral eosinophilia exist.
- In many cases, resolution of the reaction after withdrawal of the suspected medication, possibly with recurrence on rechallenge, provides the most definitive evidence of a drug-induced process.

Treatment

- Withdraw the offending drug, recognizing that it can take 1 to 3 weeks for complete resolution of the reaction.
- Midpotent to ultrapotent topical steroids may be prescribed for a short duration until resolution.
- Antihistamines (e.g., cetirizine, hydroxyzine) may be used for severe pruritus.
- Topical anesthetic or soothing creams may be used, such as hydrocortisone acetate– and pramoxine (Pramosone, Epifoam, Novacort)–based creams, foams, or lotions.
- Sunscreens with broad protection (including ultraviolet A [UVA]) are necessary for patients with photo-induced processes.

Fig. 10.24. Intense eczematoid dermatitis due to lisinopril. The patient also demonstrated a peripheral eosinophilia.

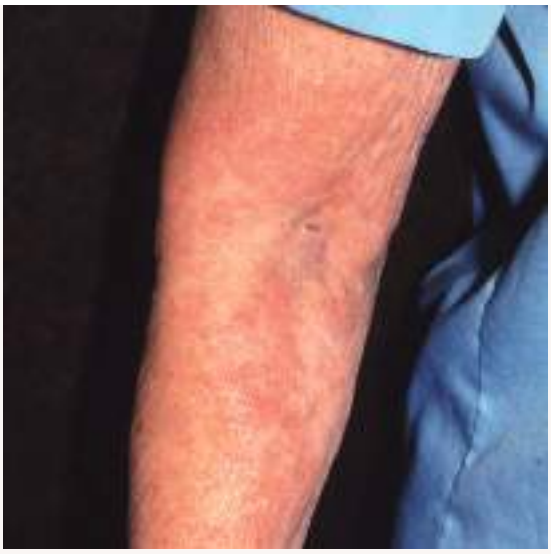

Fig. 10.25. Patient with eczematoid drug eruption due hydroxychloroquine. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.26. Patient with eczematoid drug eruption due to four vitamin K injections.

Fig. 10.27. Eczematoid drug eruption due to trimethoprim-sulfamethoxazole in a young child that mimics facial infantile atopic dermatitis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Nummular Dermatitis ICD10 code L30.0

Pathogenesis

Nummular dermatitis is derived from the Latin word *nummulus*, which means "coinlike." The condition produces round, coin-shaped, areas of dermatitis, often on the lower extremities. The condition is more common in areas of low humidity and in winter, suggesting that excessive drying of the skin is involved in the pathologic process. Also, individual lesions tend to recur at sites of prior involvement, suggesting some localized susceptibility. As in AD, soaps, wool, frequent bathing, and other irritants may worsen nummular dermatitis. Staphylococcal species colonize 95% of skin lesions but may or may not be involved directly in causation. In contrast to atopic dermatitis, serum IgE levels are usually normal.

Clinical Features

Differential Diagnosis of Coin-Shaped Plaques of Dermatitis

- Atopic dermatitis
- Eczematoid drug eruptions
- Mycosis fungoides
- Nummular dermatitis
- Parapsoriasis
- Pityriasis rosea
- Tinea corporis

- Nummular dermatitis affects a biphasic population of older men (>50 years) and young women (teenagers and young adults), but it can affect any age group.
- Pruritus is usually present and can be severe. Sometimes, patients report no pruritus at all.
- The lesions are usually located on the lower extremities (Fig. 10.28) but may also involve the upper extremities and trunk. The head and neck are rarely involved.
- Primary lesions exist as round to oval erythematous coin-shaped plaques studded with pinpoint vesicles, erosions, and crusts (Figs. 10.29 and 10.30). Individual lesions vary from 1 to 10 cm in size.
- Chronic lesions may develop lichenification.

Evaluation

- The diagnosis of nummular dermatitis is based on history, distribution, and characteristic appearance of the lesions.
- Skin biopsy may be useful in excluding other diseases with a similar presentation, such as mycosis fungoides and dermatophyte (tinea) infections.

Treatment

- Most cases of nummular dermatitis can be improved with generous emollient use and avoidance of irritants. Recommended soaps include Dove Sensitive Skin Body Wash, Olay Sensitive Body Wash, Aveeno Daily Moisturizing Body Wash, and Cetaphil skin-cleansing products.
- Many cases require the addition of midpotent to ultrapotent topical corticosteroids, such as triamcinolone 0.1% cream, fluocinonide 0.05% cream, or even clobetasol 0.05% cream in recalcitrant cases.
- Many dermatologists add empiric antistaphylococcal antibiotics, such as dicloxacillin or cephalexin.
- Severe cases may require short-duration oral corticosteroids or phototherapy with narrow-band (NB) UVB light.

Clinical Course

Nummular dermatitis may resolve spontaneously but often persists or waxes and wanes with the seasons and with ambient humidity. In one 2-year study, only 22% of patients demonstrated spontaneous remission.

Fig. 10.28. Patient with classic nummular dermatitis of the lower extremities demonstrating numerous round pruritic eczematoid lesions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.29. Close-up of a patient with nummular dermatitis demonstrating erythema, scale, and crust. This lesion was secondarily infected with *Staphylococcus aureus*. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.30. Patient with nummular dermatitis of the leg and palm. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Id Reactions (Autoeczematization) ICD10 code L30.2

Pathogenesis

An id reaction is a secondary immunologic host response that follows a primary eczematous process, such as stasis dermatitis or an infection (tinea). The other term for an id reaction is *autoeczematous response.* For example, as the primary event, a patient may have ACD, infected stasis ulcer, or intense dermatophyte infection, and then the immunologic system triggers an id reaction (autoeczematous response), which leads to inflamed and affected skin well away from the primary process.

Clinical Features

- By definition, the patient must have an identifiable primary skin problem, usually a dermatophyte infection, stasis ulceration, or other form of dermatitis.
- The id reaction consists of erythematous eczematous papules or small plaques (Figs. 10.31 to 10.34).
- Id reactions are often but not always intensely pruritic.
- Less often, id reactions may be bullous or scaly.
- In general, id reactions tend to be more severe near to the primary process and decrease in intensity with distance from the primary process, but there are exceptions. For example, patients with tinea pedis may have id reactions that consist of scaling of the palms, well away from the feet.

Diagnosis

- An id reaction is a challenging diagnosis in dermatology because it may only be definitively established by treating the primary process and producing a remission in the secondary id process.
- A high index of suspicion for an id reaction is necessary in the following situations:
  - A patient with a known primary dermatitis (especially chronic ulcers and superficial fungal infections) with dermatitic lesions that spread the site of involvement of the primary disease
  - A patient with a dermatitis or ulcer that appears secondarily infected and who has a sudden onset of dermatitic lesions of the palms and/or soles
  - Dermatitic lesions that appear to develop from drainage of serum or pus from a primary lesion
- Cultures often grow *S. aureus,* and this may be involved as a superantigen that incites the id reaction.
- A skin biopsy may be helpful in excluding other causes, but the histologic findings are not diagnostic of only an id reaction and cannot be distinguished from those of ACD, AD, nummular dermatitis, and spongiotic drug eruptions.

Treatment

- Management focuses on treatment of the primary skin disorder (e.g., infected ulcer, dermatophyte infection).
- The treatment of pruritus includes topical menthol-camphor or lidocaine-menthol preparations.
- Antihistamines at night (e.g., hydroxyzine, diphenhydramine) are beneficial for sedation and relief of pruritus.
- Treatment with topical steroids requires moderate or potent agents (e.g., triamcinolone, fluocinonide).
- Severe cases may require a 3- to 7-day burst of oral prednisone (40 mg PO qd × 3-7 days).

Clinical Course

- Most acute id reactions last only 2 to 3 weeks as long as the primary process is treated.
- Id reactions may be chronic when the stimulus continues (e.g. continued infection of a leg ulcer).

Fig. 10.31. Patient with KOH-negative, low-grade eczematoid reaction on the palms due to tinea pedis. The id reaction resolved with treatment of the feet. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.32. Patient with severe id reaction of the lower extremities due to onychomycosis (note the right great toenail) and tinea pedis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.33. Patient with severe id reaction to a topically applied henna tattoo. The outline of the tattoo is vaguely visible in the center of the arm. (From the Joanna Burch Collection, Aurora, CO.)

Fig. 10.34. Severe id reaction of the ear and face of a young child due to a kerion of the scalp. (From the William Weston Collection, Aurora, CO.)

Dyshidrosis (Pompholyx) ICD10 code L30.1

Pathogenesis

Dyshidrosis is hand-foot dermatitis of uncertain pathogenesis. A study of 104 patients has f ound that 50% of patients with dyshidrosis have a personal or family history of atopy compared with only 11.5% of patients in a control group with this same personal or family history. Although many patients cannot identify aggravating factors, some patients implicate hyperhidrosis, changing seasons, exposure to harsh chemicals, or even stress.

Clinical Features

- Dyshidrosis is most common in middle-aged women (20–50 years) but also affects men and women of all ages. The condition is uncommon in adolescents or children.
- Often, the condition begins as erythematous skin with eczematous features on the plantar surfaces of the hands (Fig. 10.35) and feet.
- In some patients, clear fluid-filled, tapioca-like vesicles may appear on the lateral digits (Fig. 10.36).
- Less often, the vesicular lesions may be larger and more bullous on the palmoplantar surface; some may refer to the condition as *pompholyx* in this situation.
- Some patients may demonstrate only erythema, without vesiculation, whereas others may demonstrate hyperkeratosis that resembles psoriasis (Fig. 10.37).

Diagnosis

- The diagnosis is established chiefly by history and physical examination.
- The family and personal history should include specific queries regarding atopy.
- Because ACD may mimic dyshidrotic hand dermatitis, a careful exposure history and patch testing should be considered. Patch testing usually needs to be done by a dermatologist but should be considered, especially for those patients with persistent or recurrent disease.
- In unusual cases, a punch biopsy may be useful to exclude other conditions, such as bullous pemphigoid, which can present as blisters on the hands and feet or bullous tinea infections.

Treatment

- Poor barrier function is common in dyshidrosis, particularly given the association with atopy. Excessive wet work, handwashing, and exposure to irritants should be minimized.
- Patients should clean their hands only with gentle cleansers; harsh lye-based soaps should be avoided.
- Hands should be protected from excessive water exposure using vinyl or neoprene or powder-free latex gloves placed over a white cotton glove (the latter for moisture absorption).
- Hand moisturizers with dimethicone (e.g., Thera-Seal Hand Protection, Gloves in a Bottle) may be useful in providing further barrier protection (so-called barrier creams).
- For mild disease, triamcinolone ointment, fluocinolone ointment, or betamethasone diproprionate ointment may be effective. In severe cases, clobetasol ointment or halobetasol ointment may be necessary. Using occlusion with white cotton gloves (with or without vinyl gloves on top) or white cotton socks can increase the penetration of steroids. Tell patients to soak their hands in tap water briefly, apply steroids, cover with gloves or socks, and repeat for 2 to 5 nights.
- Consider 7 to 10 days of treatment with antistaphylococcal antibiotics if the lesions are crusting or oozing.
- Topical bexarotene, 1% gel, applied once or twice daily, is a useful but expensive therapy.
- Severe cases may require short bursts of oral corticosteroids (40–60 mg PO qd for 2–5 days).
- Recalcitrant cases may require topical psoralen and UVA (PUVA) therapy or methotrexate. Refer the patient to a dermatologist.

Clinical Course

The disease tends to be chronic in nature (years) but may disappear spontaneously.

Fig. 10.35. Patient with severe, acute vesicular dyshidrotic hand dermatitis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.36. Close-up of dyshidrotic hand dermatitis demonstrating typical small vesicles on the lateral aspects of the fingers. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.37. Patient with dyshidrotic hand dermatitis, with erythema and marked scale. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Pityriasis Rosea Probably viral, ICD10 code L42

Pathogenesis

The pathogenesis of pityriasis rosea (PR) is not known with certitude, but it has been proposed that the condition is related to viral, bacterial, fungal, or *Mycoplasma* infection, insect bites, or autoimmune disease. The disease has many hallmarks of a viral infection. Recently, some researchers have implicated human herpesvirus 6 and 7 as the cause of PR, but not all authorities agree.

Clinical Features

- Most patients with PR are between 10 and 35 years of age. Women are affected more often than men.
- About 25% of patients with PR report a prodrome of headache, fever, malaise, arthralgias, and gastrointestinal symptoms.
- PR often presents first with a so-called herald patch, present in 12% to 94% of patients, which consists of a solitary erythematous plaque, 2 to 10 cm in diameter (Fig. 10.38). In 5% of cases, the herald patches are multiple.
- About 7 to 14 days after the herald patch (range, 3 hours–84 days), daughter lesions occur in a truncal, T shirt–like distribution. These thin scaly patches and plaques occur along skin tension lines, producing a Christmas tree–like pattern (Fig. 10.39).
- Individual lesions demonstrate an erythematous color, thin scale, and slightly darker center that demonstrates a branlike desquamation when stretched or scratched.
- About one-third of patients complain of pruritus.
- Clinical variants include cases with an inverse pattern (10% to 15%), unilateral pattern, bullous lesions, lichenoid lesions, hemorrhagic lesions, and erythema multiforme–like lesions.
- Oral lesions may be present in 9% of patients (Fig. 10.40).

Diagnosis

- The clinical differential includes dermatophyte infection, nummular dermatitis, PR-like drug eruptions, and secondary syphilis.
- Because PR is self-limited, the diagnosis is often made on a clinical basis, with reassessment in 6 to 12 weeks if the process has not completely resolved.
- Patients with oral lesions or lymphadenopathy should have a screening test (rapid plasma reagin [RPR] test, venereal disease research laboratory [VDRL] test) for syphilis because secondary syphilis may resemble PR.
- A skin biopsy of PR (punch biopsy is preferred) is not typically diagnostic but may suggest the diagnosis and will help exclude other diseases.

Treatment

- Patients do not usually require therapy because the disease is self-limited and is usually asymptomatic.
- Pruritic patients may be treated with topical corticosteroids and antihistamines for symptomatic relief.
- Severe cases can be treated with UVB therapy, typically using five consecutive erythemogenic (mild sunburn-inducing) doses. At least one study has demonstrated that this shortens the duration of disease.
- A short course of oral prednisone (20–40 mg PO qd, for 3 to 7 days) is used for some severe cases.
- A 2000 study of 90 persons showed oral erythromycin (250 mg PO qid × 14 days) resulted in clearance in 73% of patients, compared to no clearance in a placebo-dosed control group.

Clinical Course

PR typically lasts for about 6 weeks, but, in some patients, the condition may last up to 12 weeks. Nearly all cases of PR resolve within 3 months; if the condition does not resolve, the diagnosis of PR should be reconsidered.

Fig. 10.38. Patient with classic pityriasis rosea demonstrating a typical herald patch near the axilla associated with a shower of secondary round to oval lesions. The herald patch will typically be the first lesion to resolve. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.39. Patient with explosive onset of the secondary lesions of pityriasis rosea demonstrating a vague Christmas tree pattern. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.40. Closer view of pityriasis rosea demonstrating orientation of oval lesions along skin lines. The leading edge also demonstrates a trailing scale. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Seborrheic Dermatitis ICD10 code L21.9

Pathogenesis

Seborrheic dermatitis (SD) is a ubiquitous condition, possibly irritant in nature, that is related to an unidentified antigen or product of commensal lipophilic yeast belonging to the *Malassezia genus.* This yeast exists in the sebum-rich areas of the skin, which accounts for the characteristic distribution of the condition. The yeast's need for sebum also explains the occurrence of SD in infants, when they have high maternal hormones, and the disappearance of the disease during childhood, with a later re-emergence after puberty.

Clinical Features

- SD usually affects the scalp, eyebrows, eyelids, nasolabial folds, ears, and genital folds (Fig. 10.41).
- Cradle cap is the lay term applied to infantile SD. SD in the genital area of infants may also mimic diaper dermatitis.
- Adolescents and adults usually manifest slightly lesser scalp involvement than infants (Figs. 10.42–10.44). Dandruff is the lay term applied to mild SD of the scalp. Less often, areas of involvement include the axillae, genitalia, and midchest.
- Close inspection of the plaques of SD reveals erythema with variable scale, which may be white to yellowish and slightly greasy.
- Clinical variants include annular lesions (seborrhea petaloides) and markedly scaly lesions (sebopsoriasis, which resembles psoriasis).
- Symptoms of SD vary from none at all to moderately pruritic.

Diagnosis

- The diagnosis of SD is established chiefly by history and physical examination.
- The distribution is important because involvement of classic sites is a supportive clinical clue, even when other unusual findings are present.
- Skin biopsy is usually reserved for atypical presentations. In most cases, the histologic findings are consistent with SD but are not diagnostic of only that condition.

Treatment

- Mild scalp disease (dandruff) can be treated with shampoos, including zinc pyrithione–based (e.g., Head & Shoulders), ketoconazole, tar, salicylic acid, ciclopirox olamine, and 5% tea tree oil shampoos (40% response rate). Patients who fail shampoo therapy can be treated with once-daily topical fluocinolone solution or fluocinonide solution.
- Eyelid SD or cradle cap in infants is best treated with gentle cleansing using Johnson's Baby Shampoo.
- Glabrous skin (non–hair-bearing skin) should be treated with a mild topical corticosteroid cream, such as 1% hydrocortisone acetate or desonide 0.05% cream. Rare cases require hydrocortisone valerate.
- Topical antifungals may also be used; all topical imidazoles are basically equally effective (e.g., clotrimazole, ketoconazole, sulconazole).
- In severe or extensive disease, oral itraconazole (200 mg PO qd for 3–7 days) may be used, with the dosage and duration tailored to fit the disease and response. Often, additional doses are used (200 mg PO) on the first day(s) of each month (≈two-thirds of patients will respond).

Clinical Course

SD can be managed but not cured; a waxing and waning course can be anticipated.

Fig. 10.41. Infantile seborrheic dermatitis (cradle cap) with characteristic involvement of the scalp, eyebrows, eyelids, and ear. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.42. Patient with classic seborrheic dermatitis with involvement of the scalp (dandruff) and ears. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.43. Patient with classic seborrheic dermatitis with involvement of the scalp, facial wrinkles, and a melolabial fold. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.44. Patient with characteristic involvement of seborrheic dermatitis on the eyelid margin. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Erythrasma ICD10 code L08.1

Introduction

Erythrasma can mimic a low-grade dermatitis, but it is actually a minor superficial bacterial infection. It is more common in humid climates and is caused by infection with *Corynebacterium minutissimum,* a short, gram-positive diphtheroid.

Clinical Features

- Erythrasma presents as sharply demarcated patches of red or red-brown skin covered by a fine white scale (Fig. 10.45).
- In patients with darker skin, there is lesser erythema or minimal to modest hyperkeratosis (Fig. 10.46).
- Erythrasma can be asymptomatic or may be associated with some pruritus.
- The condition is usually confined to the anogenital area, with the inner upper thighs being often affected. Less often, the axilla is affected.

Diagnosis

- Subtle erythema, particularly with red-brown tints and subtle scale, involving the anogenital region or axilla, should suggest the diagnosis. Erythrasma often lacks a distinctive annular edge, whereas dermatophyte infections, which affect the same skin areas, usually have sharp annular shapes.
- The diagnosis is confirmed by demonstrating a coral red fluorescence with Wood light (Fig. 10.47). The often spectacular fluorescence that is observed is due to a porphyrin produced by the bacteria. The skin may not fluoresce if the patient has bathed recently, since the porphyrin is water-soluble, and if this is suspected, the patient should be retested before bathing.
- A skin biopsy is not usually employed but, if performed, the bacteria can be identified in large numbers in the stratum corneum. Note that it is important to list the suspicion of erythrasma on the accession sheet so that the pathologist will know to look for these organisms.
- A scraping of scale, with KOH examination, may be used to exclude dermatophytosis, candidiasis, and tinea pityriasis versicolor.
- Cultures are not usually carried out. The organism is notoriously difficult to culture.

Treatment

- Erythromycin (250 mg PO qid × 5 days) is the most common treatment used.
- Clarithromycin (1 g PO) as a single dose has also been reported to be successful; it costs about the same as a 5-day course of erythromycin.
- Topical 2% clindamycin solution, topical 2% erythromycin solution, or 4% topical erythromycin gel, applied bid for 5 to 7 days, is equally effective. These regimens can be used by patients who do not want to take oral antibiotics or when there are medication interactions.
- Topical 10% to 20% aluminum chloride can be used bid for 5 to 7 days in patients who do not want to use antibiotics.

Clinical Course

Erythrasma is easily cured with topical or systemic therapy. Some patients may reacquire the infection, particularly in humid climates.

Fig. 10.45. Patient with erythrasma demonstrating characteristic reddish-brown scaly dermatitis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

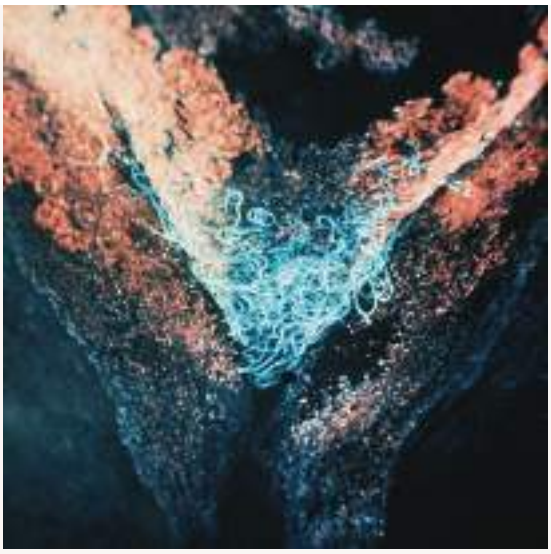

Fig. 10.47. Striking coral red fluorescence with Wood light examination in a patient with erythrasma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 10.46. Patient with scaly erythrasma with a subtle brownish-red background. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 11
Blisters and Vesicles

Key Terms

Herpes Zoster
- Herpes zoster ophthalmicus
- Ramsey-Hunt syndrome

Herpes Simplex
- Disseminated infection
- Eczema herpeticum
- Herpes gladiatorum

Herpetic whitlow
Hutchinson sign
Neonatal herpes simplex virus infections

Blisters and vesicles represent a common category of cutaneous disease. Blisters are an important physical finding because only a limited number of diseases present in this fashion. Usually, in bullous conditions, the clinical presentation, biopsy results, and results of direct immunofluorescent studies will allow for a singular diagnosis. A biopsy from a fresh blister is of greater use in the diagnosis because blisters can occur by different mechanisms (e.g., spongiosis, acantholysis). Blisters may be broadly divided into fragile and and tense blisters.

Fragile Blisters

- Bullous impetigo
- Hailey-Hailey disease
- Pemphigus (all variants)
- Staphylococcal scalded skin syndrome

Tense Blisters

- Allergic contact dermatitis (severe)
- Bullous pemphigoid
- Bullous drug eruption
- Bullous eruption of diabetes
- Bullous fixed drug eruption
- Cicatricial pemphigoid
- Dermatitis herpetiformis
- Dyshidrotic hand dermatitis
- Epidermolysis bullosa acquisita
- Epidermolysis bullosa (genetic)
- Erythema multiforme
- Hand, foot, and mouth disease
- Herpes simplex virus infection
- Herpes gestationis
- Linear immunoglobulin A (IgA) bullous dermatosis
- Porphyria cutanea tarda
- Second-degree sunburn
- Smallpox
- Toxic epidermal necrolysis
- Vaccinia infection
- Varicella-zoster virus infection

IMPORTANT HISTORY QUESTIONS

How long have the blisters been present?

Some conditions, such as allergic contact dermatitis due to poison ivy, may cause acute blistering, whereas other processes, such as bullous pemphigoid, may be chronic in nature.

Have you had blisters before, and do the blisters occur at the same site(s)?

Repetitive blistering could indicate an ongoing exposure, such as poison ivy, ongoing drug use or drug exposure (e.g., fixed drug eruption, repeat Stevens-Johnson syndrome), recurrent bullous erythema multiforme, or recurrent herpes simplex infection.

Are the blisters symptomatic?

Some vesiculobullous disorders are asymptomatic (bullous diabeticorum), whereas others are painful (e.g., toxic epidermal necrolysis) and others are pruritic (e.g., dermatitis herpetiformis).

Are you taking any medications?

Medications may produce blistering disorders, such as bullous drug eruptions, drug-induced linear IgA bullous dermatosis, drug-induced pemphigus, toxic epidermal necrolysis, bullous fixed drug reactions, and Stevens-Johnson syndrome or toxic epidermal necrolysis. Also, some other vesiculobullous diseases may be aggravated by medications.

IMPORTANT PHYSICAL FINDINGS

How old is the patient?

Some blistering disorders occur chiefly in neonates (incontinentia pigmenti), whereas other disorders are more likely to occur in children (e.g., chickenpox), in young adults (e.g., erythema multiforme), in middle-aged adults (e.g., porphyria cutanea tarda), or in geriatric patients (e.g., bullous pemphigoid).

Is the patient a woman of childbearing years, is she pregnant, or has she just delivered a baby?

Gravid or recently gravid status is important in establishing a diagnosis of herpes gestationis.

What is the distribution of the blisters?

Some blisters have characteristic distributions or configurations. For example, sharp lines or irregular shapes often suggest an exogenous origin, such as contact dermatitis or toxic injuries to the skin.

Is the oral mucosa (or other mucosal surfaces) involved?

Mucosal surfaces are often involved in herpes simplex infections and in erythema multiforme (Stevens-Johnson syndrome), toxic epidermal necrolysis, and pemphigus vulgaris or paraneoplastic pemphigus.

Bullous Impetigo ICD10 code L01.03

Pathogenesis

Impetigo caused by staphylococcal infection is usually associated with group II (phage group 71) *Staphylococcus aureus*. The blister is caused by a toxin, elaborated by the bacterium that lyses an adhesion molecule (desmoglein 1) necessary for keratinocyte adhesion. The split occurs in the superficial aspects of the skin. Infections are more common in the summer months and in humid climates.

Clinical Features

- Bullous staphylococcal impetigo is more common in neonates, small children (Fig. 11.1), and HIV-infected individuals.
- The primary lesions are small vesicles that progress rapidly to flaccid, pus-filled, and fragile bullae.
- The purulence inside the blister space may layer out, with a turbid yellow color (Figs. 11.2 and 11.3).
- The surrounding skin demonstrates minimal or mild erythema.
- Blisters collapse easily, yielding a varnished appearance to the skin where the blister was located.
- Some variations demonstrate only yellow-colored exudative erosions, without active blisters.

Diagnosis

- The clinical presentation of flaccid, pus-filled bullae, with yellow crusting, is often diagnostic.
- Gram-positive cocci in flaccid blisters, as demonstrated with a Gram stain, supports the diagnosis but does not allow for accurate differentiation between streptococcal and staphylococcal causes.
- The diagnostic test of choice is a surface culture, with antibacterial sensitivity testing.
- The diagnosis may be made by biopsy, but this is not usually required.

Treatment

- Topical mupirocin or retapamulin ointment (applied bid for 5 days) is a suitable treatment for limited disease.
- More generalized cases of bullous impetigo are treated empirically with a β-lactam antibiotic, such as oral dicloxacillin (250 mg PO qid for 7–10 days) or cephalexin (250–500 mg PO tid to qid for 7–10 days), because most community-acquired bullous impetigo is not methicillin resistant; this may vary in different areas. This is in contrast to staphylococcal folliculitis, furunculosis, and dermal abscesses.
- Any antibiotic regimen prescribed empirically can be altered once antibiotic susceptibility studies have concluded, based upon the results of culture.
- Oral erythromycin or azithromycin may be used for penicillin-allergic patients, although erythromycin-resistant staphylococci are prevalent (19%–50% of strains) in some regions of the country.
- Methicillin-resistant strains (MRSA) can be treated with ciprofloxacin, trimethoprim, doxycycline (in older children or adults), or topical mupirocin. The management of recurrent impetigo, often due to colonization of *S. aureus*, is a complex issue beyond the scope of this text.

Clinical Course

Most cases do not require follow-up but if the patient continues to get new lesions, beyond 3 days after starting the antibiotic, the veracity of the diagnosis should be reassessed. Correlation with culture or bacterial susceptibility studies should be made. Some patients may become chronic carriers of impetigo-producing *S. aureus* strains.

Fig. 11.1. Bullous impetigo in an infant. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.2. Patient whose axilla demonstrated numerous flaccid blisters in various stages of development. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.3. Patient with a flaccid blister demonstrating layering of pus at the base, a finding sometimes seen in bullous impetigo. Note that the superficial blister on the right has broken. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Staphylococcal Scalded Skin Syndrome ICD10 code L00

Pathogenesis

Staphylococcal scalded skin syndrome (Ritter disease; SSSS) is caused by infection with group II (often phage group 71) *S. aureus*. Blisters are caused by exfoliative toxins elaborated by the bacteria that lyse an attachment molecule (desmoglein 1) located between keratinocytes. The result is a superficial split in the epidermis in the area of the granular layer. It is thought that infants and young children are more susceptible because immature kidney function does not clear the toxins. This is the same reason why an increased incidence of SSSS is observed in adults with renal disease. Increased susceptibility in immunocompromised adults is poorly understood but may be due to impaired neutralization of the toxin.

Nikolsky Sign

The Nikolsky sign refers to the production or extension of a blister by lateral or rotating pressure on the epidermis with a finger or a pencil. It is usually associated with the following diseases:

- Pemphigus vulgaris
- Staphylococcal scalded skin syndrome
- Toxic epidermal necrolysis

Clinical Features

- The condition occurs most often in neonates and young children (<5 years).
- The primary site of infection is often unapparent but a prodrome of fever, malaise, lethargy, and irritability is often observed.
- In children and neonates, the disease often begins in the perioral region (Fig. 11.4) and on the neck, axillae, and groin (Fig. 11.5).
- Early lesions are tender and erythematous and manifest variable edema, with superficial bullae and skin fissuring.
- Blisters are fragile, and sloughing leaves shallow bullae, with a moist erythematous surface (Fig. 11.6).
- The Nikolsky sign is often present (see box).
- Adults who experience SSSS frequently have impaired renal function or are immunocompromised and may also develop a staphylococcal cellulitis.
- Mucosal sites are rarely involved.

Diagnosis

- The clinical presentation is usually diagnostic in neonates, infants, and children.
- Because the process is caused by a systemic toxin, Gram staining and cultures of blister cavity fluid are negative, in contrast to bullous impetigo.
- The diagnosis may be suggested on biopsy, with a cleavage plane immediately below the granular layer, but a biopsy is not usually required. The histologic findings of pemphigus foliaceus overlap.

Treatment

- Older infants and young children who are able to eat and drink, and who are with limited cutaneous disease, can be treated with oral antibiotics sufficient to cover *S. aureus* and with local skin care.
- Neonates and children with more severe disease may require admission for intravenous antistaphylococcal antibiotics such as naficillin, oxacillin, vancomycin, or linezolid.
- Bland emollients (white petrolatum) may be used to decrease pain and promote re-epithelialization.
- NSAIDs and other drugs that impair renal function should be avoided.

Clinical Course

Desquamation occurs over 3 to 5 days, and lesions heal without permanent sequelae in 1 to 2 weeks. The mortality rate in neonates and children has been reported to be 3%, but this figure may be high due to reporting bias at tertiary institutions.

Fig. 11.4. Patient with periorificial erythema and superficial blister formation, a very common location.

Fig. 11.5. Patient with erythema and superficial blister formation in the genital area, another common location.

Fig. 11.6. Patient with diffuse erythema and extensive desquamation in the buttocks area. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Blistering Distal Dactylitis ICD10 code L08.9

Introduction

Blistering distal dactylitis is an uncommon bacterial infection that causes superficial blisters on the distal fingers of young children. In reality, it is simply bullous impetigo of acral skin; however, because of the thick stratum corneum on the hands, the blisters are tense. It is a distinctive disorder that presents in acute fashion. It is caused most often by β-hemolytic strains of *Streptococcus pyogenes* and less often by *S. aureus*.

Clinical Features

- Characteristically, the condition affects children and, less often, adolescents. Adults are rarely affected, with most adult cases occurring in those who are immunocompromised.
- Occasionally, classic impetigo may also be present elsewhere (Fig. 11.7).
- The disorder yields rapidly evolving tense and painful bullae on the anterior fat pads of the distal fingertips (Figs. 11.8 and 11.9). Older lesions may become crusted.
- Less often, the bullae extend to involve the lateral and proximal nail folds.

Diagnosis

- The clinical presentation is suggestive of blistering distal dactylitis, but the differential diagnosis includes traumatic blisters, thermal and chemical burns, and herpetic whitlow (herpes simplex infection of the finger).
- The blisters of distal dactylitis are typically unilocular, whereas the blisters of herpetic whitlow are usually multilocular; this is an important diagnostic clue.
- In an urgent care or office setting, the blisters can be aspirated, with Gram staining performed on the fluid and with abundant gram-positive cocci apparent.
- The aspirate can be cultured with antibiotic sensitivities used to guide management.

Treatment

- Tense blisters may be drained, but there is no evidence that this speeds recovery.
- Dicloxacillin at a dose of 3.125 to 6.25 mg/kg may be used for children weighing less than 40 kg.
- Alternative treatments include cephalexin, erythromycin, or another oral antibiotic that covers streptococcal and staphylococcal infection.
- Because of the thickness of the blister roof and frequent presence of β-hemolytic strains of *S. pyogenes*, topical antibiotics, at least as solo therapy, are not recommended.

Clinical Course

The patient should start to demonstrate improvement within 72 hours. If this does not occur, the diagnosis and treatment need to be reassessed.

Fig. 11.7. Patient with both streptococcal impetigo and blistering distal dactylitis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.8. Close-up of older lesion of blistering distal dactylitis demonstrating early crusting. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.9. Close-up of classic tense blister of blistering distal dactylitis on the digital pad. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Pemphigus Foliaceus ICD10 code L10.2

Causes of Drug-Induced Pemphigus Foliaceus
- Captopril (common)
- D-Penicillamine (common)
- Enalapril (rare)
- Sulfasalazine (rare)

Pathogenesis

Pemphigus foliaceus (PF) is an uncommon autoimmune bullous condition caused by immunoglobulin G (IgG) autoantibodies directed against desmoglein 1, a molecule involved in the normal cohesion of keratinocytes. In this condition, the split occurs below the cornified layer or in the superficial granular layer. This is the same location as the split in bullous impetigo and SSSS. PF can also be induced by some medications.

Clinical Features

- Middle-aged and older adults are usually affected, but, on occasion, children may be affected.
- There is a predilection for the head and trunk, but in some cases it may involve the entire body surface area, causing erythroderma.
- Primary lesions are often ruptured vesicles or, less often, intact bullae that arise on normal or erythematous skin (Figs. 11.10 and 11.11).
- In some cases, the blister may become cloudy or even appear pustular.
- The Nikolsky sign is present in many cases (see p. 166).
- Scaling and crusting are common, and, in some cases, the condition may resemble dermatitis (Fig. 11.12). Verrucous lesions may even resemble a seborrheic keratosis.
- Drug-induced PF appears clinically identical to idiopathic cases (Fig. 11.13).

Diagnosis

- Recurrent, superficial, often ruptured blisters, with a background of scaling and crusting, are highly suggestive of the diagnosis. There should be no oral involvement.
- It is useful to culture the blister contents to exclude bullous impetigo.
- A shave or punch biopsy, performed at the edge of the lesion, is necessary to establish an acantholytic blistering disorder; this is a cardinal feature of PF.
- DIF of perilesional skin is the diagnostic method of choice. This can be performed using a shave (preferred) or punch biopsy. The tissue must be placed in immunofluorescence transport media, normal saline (for periods of <24–48 hours), or snap frozen.
- If a direct immunofluorescent medium is not readily available, blood can be drawn in a red-top tube (serum separator tube) and sent to an immunofluorescence laboratory for indirect immunofluorescence or to a reference laboratory for enzyme-linked immunosorbent assay (ELISA) measurement of desmoglein antibodies.

Treatment

- First-line therapy is oral prednisone (0.5–1.0 mg/kg per day) with a slow taper, using steroid-sparing agents as the taper proceeds.
- Other medications and/or steroid-sparing agents include methotrexate, azathioprine, dapsone, cyclophosphamide, and rituximab.
- Any drug known to induce PF should be discontinued or substituted with an unrelated agent.

Clinical Course

The disease is often chronic and may last for years. Children are more likely to demonstrate a short course of disease. In contrast to pemphigus vulgaris, PF has a more benign course, and fatal outcomes are uncommon. Patients with drug-induced PF typically demonstrate resolution over weeks to months, after withdrawal of the inciting medication.

Fig. 11.10. Large erythematous plaques of pemphigus foliaceus, with an edge of flaccid blisters. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.11. Close-up of a more subtle example of pemphigus foliaceus presenting as red papules, with flaccid vesicles. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.12. Severe generalized pemphigus foliaceus that, at first glance, has the appearance of dermatitis rather than a blistering disorder. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.13. Subtle case of pemphigus foliaceus induced by D-penicillamine. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Pemphigus Vulgaris ICD10 code L10.0

Pathogenesis

Pemphigus vulgaris is a serious autoimmune bullous disorder caused by autoantibodies directed against desmoglein 1 and desmoglein 3 (Fig. 11.14). These molecules are involved in the normal cohesion of keratinocytes, and hence, the condition leads to large flaccid bullae that are easily ruptured. The mouth is often involved. Rarely, pemphigus vulgaris is triggered by drugs (see box) or foods such as garlic and leeks.

Drug-Induced Pemphigus

- Captopril (common)
- D-Penicillamine (common)
- Amoxicillin (rare)
- Ampicillin (rare)
- Cephalosporins (rare)
- Penicillin (rare)
- Rifampin (rare)

Clinical Features

- The condition typically affects older adults (40–60 years old).
- Persons of Jewish or Hispanic heritage are more often affected.
- The condition may be localized (often on the head or trunk), or it may eventuate as a generalized eruption (Fig. 11.15).
- Vesicles and bullae (up to several centimeters) arise on normal or erythematous skin (Fig. 11.16).
- The Nikolsky sign may be present.
- Blisters rupture in 1 to 3 days, with a painful, raw, erythematous base.
- Scaling and crusting of older lesions are common.
- Oral involvement is present in more than 90% of patients (Fig. 11.17) during the course of the illness, and often it is the initial site of the presentation.

Diagnosis

- A vesiculobullous disorder with marked mucosal involvement suggests the diagnosis, especially if the Nikolsky sign is present.
- A shave or punch biopsy from the edge of the lesion should always be done.
- DIF using perilesional skin may be performed on a shave biopsy (preferred) or punch biopsy and submitted in immunofluorescent transport media, in saline (for up to 24–48 hours), or snap frozen.
- If a direct immunofluorescent medium is not available, blood can be drawn in a red-top (serum separator) tube and sent for indirect immunofluorescence examination or ELISA testing.

Treatment

- First-line therapy is oral prednisone (0.5–1.0 mg/kg per day) with a slow taper, using steroid-sparing agents as the taper proceeds.
- Pulse corticosteroids (250–1000 mg/day of methylprednisolone sodium succinate) for 1 to 5 days may be used for severe disease or for patients with a poor response to oral prednisone.
- Intravenous immunoglobulin (IVIG), 400 mg/kg per day for 5 days, with the addition of cyclophosphamide (100–150 mg/day) in severe cases, results in clearing in 80% of patients within 2 weeks.
- Methotrexate, azathioprine, rituximab, and cyclophosphamide are steroid-sparing agents that may be used in select cases.

Clinical Course

Untreated, pemphigus vulgaris has a fatality rate of more than 90%. Treated pemphigus has a fatality rate of about 10%. Typically, the disease has a chronic course, lasting years, but spontaneous remissions may occur. Maintenance of hydration and proper nutrition are challenges in those with marked mucosal involvement.

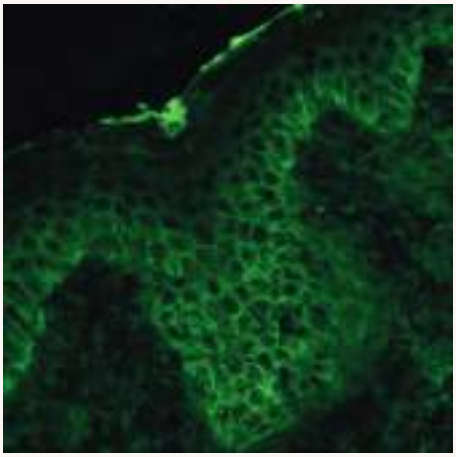

Fig. 11.14. Netlike deposition of IgG autoantibodies in the epidermis in a patient with pemphigus vulgaris.

Fig. 11.15. Generalized pemphigus vulgaris demonstrating a classic admixture of crusts, erosions, and superficial blisters. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.16. Flaccid vesicles and bullae of pemphigus vulgaris on the trunk, with crusting of an older lesion.

Fig. 11.17. Typical oral pemphigus vulgaris demonstrating erosions. Blisters are not typically seen in oral lesions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Bullous Allergic Contact Dermatitis ICD10 codes L23.0 to L23.9

Introduction

Allergic contact dermatitis (ACD) is discussed in depth in Chapter 10. Although most cases of ACD present as an eczematous process, severe ACD may present with marked blistering, particularly if contact is prolonged or if the host response is intense. One should suspect a bullous ACD when blisters are in a distribution (linear) that suggests an exogenous process and/or when pruritus is extreme. Some allergens, such as poison ivy, are well recognized to produce blisters.

Clinical Features

- This presents with erythema and blisters 24 to 72 hours after contact in sensitized patients (Fig. 11.18).
- The distribution initially follows points of contact but may involve adjacent areas later in the course.
- The configuration is typically asymmetric and does not follow normal anatomic lines. Sharp unnatural lines are often present (Fig. 11.19) due to contact with the exogenous agent.
- Bullous ACD is nearly always intensely pruritic.
- In bullous ACD, overlying tense blisters may be unilocular or multilocular (Fig. 11.20).
- New blisters and erythema may develop for up to 3 weeks, even without additional exposure.

Diagnosis

- Bullous ACD should be suspected in any blistering condition with an asymmetric and exogenous distribution pattern, particularly when linear arrangements are present.
- A careful history of potential recent exposures to allergens, such as poison ivy or topical medications, is important in establishing the diagnosis.
- A shave or punch biopsy may be useful to rule out other bullous conditions.
- In rare cases, a perilesional skin biopsy may be useful to exclude autoimmune bullous disorders.
- In patients for whom an allergen cannot be otherwise identified, patch testing may be used to establish the diagnosis and cause.

Treatment

- Remove or discontinue suspected and/or potential allergens.
- Apply potent or ultrapotent topical steroids (e.g., fluocinonide, clobetasol) bid until resolution.
- Generalized cases may require oral prednisone (20–40 mg qd for 7–21 days).
- Antihistamines may provide symptomatic relief for pruritus but do not shorten the disease course.

Clinical Course

Even though the patient may have only had a single exposure to an allergen, new lesions may continue to appear for up to 3 weeks in severe cases. In particular, the allergen in poison ivy (uroshiol) binds irreversibly to the skin and will require treatment for up to 21 days. So-called dose packs of steroids, used for about 5 days, should be avoided because the patient will frequently rebound and flare after the dose pack is completed.

Fig. 11.18. Classic linear distribution of blisters seen in poison ivy contact dermatitis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.19. Unilateral, severe, bullous allergic contact dermatitis caused by benzocaine (Lanacane). The patient was mistakenly diagnosed as having toxic epidermal necrolysis and was transferred from the emergency room to the burn unit.

Fig. 11.20. Bullous allergic contact dermatitis due to contact with adhesive tape. Note the multilocular nature of the blisters, a finding seen in many types of intraepidermal blisters. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Bullous Insect and Arthropod Reactions ICD10 code T14.1

Pathogenesis

Insects and arthropods can produce hypersensitivity reactions in the skin. Saliva from the bite of the organism (e.g., bedbugs, ticks) or feces (e.g., scybala of scabies) may serve as an allergen. When allergen exposure is limited, the host response is usually minor. However, when the antigen exposure is more substantial, or the host response is exaggerated, a vesiculobullous reaction can ensue. Common causes of bullous arthropod reactions include bedbugs *(Cimex lectularius),* fleas (Fig. 11.21), and chiggers.

Clinical Features

- Patients may or may not recall the insect or arthropod bite.
- Lesions are often located on exposed areas of the body and range from urticarial papules to bullae.
- Lesions may be solitary or multiple, and lesions can be grouped, especially in bedbug bites.
- The blister may be unilocular or multilocular on an erythematous base (Figs. 11.22 and 11.23).
- Bedbug bites occur most often on parts of the body exposed during sleep (face, neck, hands, and arms), and bites are often arranged in linear configurations (so-called breakfast, lunch, and dinner arrangement).
- Bullous insect and arthropod bite reactions are nearly always intensely pruritic, except for blistering reactions caused by cutaneous exposure to members of the blister beetle family.

Diagnosis

- In some cases, the patient may bring in the offending insect or arthropod (see Fig. 11.21).
- Bedbugs are a particular problem of travelers, and a travel history should be elicited.
- According to a major national extermination company, the top 10 cities for bedbugs includes Detroit, Philadelphia, Cleveland, Los Angeles, Dayton, Chicago, Columbus, Cincinnati, Dallas–Fort Worth, and San Francisco.
- A shave or punch biopsy is not usually indicated but, in problematic cases, the findings in a biopsy can be supportive of the diagnosis.

Treatment

- Sedating antihistamines (e.g., diphenhydramine) may be used at night for symptomatic relief and to promote sleep.
- Potent or ultrapotent forms may be used in a directed manner for a limited duration.
- Oral antibiotics may be appropriate if a secondary bacterial infection is suspected.
- Depending on the clinical situation, other treatments might include repellants, removal of pets or wildlife (e.g., an abandoned bird's nest near a bedroom window), and/or professional extermination.

Fig. 11.21. Dog flea recovered from the carpet of a patient's home. Dog fleas and cat fleas are nearly identical in appearance.

Fig. 11.22. Two arthropod reactions received at the same time. One is a crusted papule that never blistered, whereas the second demonstrates a pruritic, tense, unilocular blister.

Fig. 11.23. Arthropod reaction demonstrating a central punctum that represents the bite site. This bite is instructive in that it shows that both unilocular *(left side)* and multilocular *(right side)* blisters can occur in an arthropod reaction. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Chickenpox ICD10 code B01.9

Pathogenesis

Chickenpox, or varicella, is a primary infection with the varicella-zoster virus (VZV). Prior to the introduction of a live attenuated vaccine in 1995, there were about 4 million new cases/year, with approximately 100 deaths annually. Since mass vaccinations began, there has been a continued progressive decline in reported cases. VZV is acquired mostly in an aerorespiratory fashion.

Clinical Features

- The incubation period is 14 to 17 days.
- A prodrome of mild upper respiratory tract infection—malaise, low-grade fever—may be present.
- Primary lesions are 1- to 4-mm vesicles arising on an erythematous base (so-called dewdrops on a rose petal; Figs. 11.24 and 11.25).
- Typically, primary varicella yields crops of lesions in different phases of evolution, with some lesions being vesicular and others crusted over. The rash persists for about 2 to 7 days.
- VZV is distributed chiefly on the trunk and proximal extremities, although any site may be affected, including the oral mucosa, ocular mucosa, and nasal mucosa.
- The number of lesions is highly variable and may vary from a few or a dozen to several hundred.
- Pruritus is often substantial, especially as the lesions evolve into later stages.

Diagnosis

- The clinical presentation (dewdrops on a rose petal, with a centripetal predominance) is suggestive.
- A biopsy is diagnostic of herpes family infections, but a routine (H&E) examination cannot distinguish between VZV and herpes simplex virus (HSV) infection.
- Some laboratories have immunohistochemical stains for VZV and HSV and can make a specific diagnosis from biopsy specimens within 24 hours.
- A Tzanck preparation demonstrates acantholytic keratinocytes and multinucleated keratinocytes with cytopathic effect (see Figs. 2.17 to 2.22); this is also indicative of herpes family infections, but, again, HSV and VZV cannot be distinguished without additional studies or clinical correlation.
- Although viral culture used to be performed, all major reference laboratories have now abandoned tissue culture in favor of polymerase chain reaction (PCR)-based molecular techniques that are faster and more reliable.

Treatment

- Observation is reasonable for a young healthy patient because primary VZV is usually self-limited.
- Antiviral drugs, such as acyclovir (children, 20 mg/kg daily for 5 days; adults, 800 mg five times daily for 7 days), valacyclovir, and famciclovir, decrease the number of lesions and promote rapid healing when initiated in the first 24 hours of the rash.
- Varicella-zoster immune globulin (VZIG) is effective in treating serious infections in immunocompromised children and adults.

Clinical Course

Crusted lesions heal within 2 weeks, generally without scarring. Isolated lesions may produce small, round, depressed scars that are often most notable on the face. Complications include varicella-zoster pneumonia (more common in adults), varicella gangrenosa (gangrenous changes secondary to infection with bacteria), and Reye syndrome (particularly with coadministration of salicylates).

Fig. 11.24. Early chickenpox in a young adult demonstrating lesions in the same stage of development. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.25. Developed chickenpox demonstrating small vesicles on an erythematous base (so-called dewdrops on a rose petal).

Herpes Zoster ICD10 code B02.0-B02.9

Pathogenesis

Herpes zoster (shingles) is caused by the reactivation of VZV that resides in the dorsal root ganglia after a primary varicella infection (chickenpox) subsides. As the patient's immunity to the virus wanes, often because of age, but also because of another stressor, trauma, or immune suppression, the virus can again successfully replicate. It extends down the nerves associated with the dorsal root ganglia, leading to a classic dermatomal eruption of shingles.

Clinical Features

- Herpes zoster may occur at any age, but most cases occur in geriatric patients.
- Initial symptoms include discomfort or pain, in a dermatomal distribution, that begins 1 to 10 days before the rash is visible. Other changes, such hyperesthesia to touch or contact with clothing, may be noted.
- Early lesions consist of erythematous papules and erythema in a dermatomal distribution.
  - A thoracic dermatome is most often affected, followed by the trigeminal, cervical, and lumbar dermatomes (Fig. 11.26).
  - **Ramsey-Hunt syndrome** is caused by involvement of the geniculate ganglion. It consists of blisters on the pinna, auditory canal, and anterior two-thirds of the tongue, with associated Bell palsy, tinnitus, deafness, vertigo, impaired taste, and, rarely, viral meningitis.
  - **Herpes zoster ophthalmicus** (Fig. 11.27) is caused by involvement of the first division of the trigeminal nerve. It presents as conjunctivitis, scleritis, episcleritis, keratitis, optic neuritis, and other ophthalmic symptoms. An early clinical clue is the **Hutchinson sign,** lesions on the tip or one side of the nose.
- Developed lesions include grouped vesicles (1–4 mm in size) on an erythematous base and located in a dermatomal distribution. Large bullae are rare. Older lesions may appear be pustular (Fig. 11.28).
- Vesicles crust over in 2 to 5 days, but immunocompromised patients may develop ulcers or hemorrhage.

Diagnosis

- The clinical presentation of painful grouped vesicles on an erythematous base, in a dermatomal distribution, is essentially diagnostic of zoster. Mild cases may resemble recurrent HSV infection.
- A biopsy can be diagnostic, if combined with immunohistochemical staining, but is not usually necessary,
- PCR-based studies, which have replaced culture at all reference laboratories, are also of diagnostic use.
- A Tzanck preparation demonstrates acantholytic keratinocytes, multinucleated keratinocytes, and cytopathic effects (see Figs. 2.17–2.22), but, again, HSV and VZV cannot be distinguished in a simple Tzanck preparation.

Treatment

- No treatment is reasonable if the blisters are older than 72 hours, and the patient is not at risk for postherpetic neuralgia. Nonspecific measures include pain medications and cool compresses.
- Antiviral agents are useful when started in the first 72 hours; these include acyclovir (800 mg PO five times daily for 7–10 days), valacyclovir (1000 mg PO tid for 7 days), and famciclovir (500 mg PO tid for 7 days).
- Oral prednisone (40–60 mg PO qd, tapered over 2–3 weeks), in combination with an antiviral agent, has been used to prevent postherpetic neuralgia in patients older than 50 years, but the benefit is controversial.

Clinical Course

Patients with a recent eruption of herpes zoster are not at immediate risk for another episode. Most persons have only one episode of shingles in a lifetime. Up to 40% of patients older than 60 years will develop postherpetic neuralgia (dermatomal pain lasting >12 weeks after the rash has subsided).

Fig. 11.26. Early herpes zoster in a thoracic dermatome in a pediatric patient. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.27. Resolving herpes zoster ophthalmicus demonstrating scaling and crusting. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.28. Developed case of herpes zoster in a thoracic dermatome demonstrating an admixture of vesicles, pustules, and erosions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Herpes Simplex Virus Infection ICD10 codes B00.0-B00.9

Pathogenesis

Epidemiologic studies have shown that about 80% of adults have antibodies to HSV-1, which affects chiefly the oral mucosa, and 25% of young adults have antibodies to HSV-2, which affects chiefly the genitalia. HSV infection occurs by direct inoculation via physical contact with an infected person. The virus replicates in keratinocytes and neurons at the site of inoculation and eventually makes its way to the dorsal root ganglia, where it enters quiescence. Various stimuli, including fever, sunburn, and stress, can stimulate replication, with extension down the sensory nerves to the skin, yielding recurrent lesions.

Clinical Features

- Certain strains of HSV affect the oral mucosa (HSV-1) or genital mucosa (HSV-2) more often. Actually, any mucocutaneous site, such as the fingers (herpetic whitlow), may be affected by either strain.
- Primary HSV infections are more severe and may include a prodrome of fever, localized edema, and lymphadenopathy (Fig. 11.29). Primary herpetic infections of the mouth may yield significant oral ulcerations in children (herpetic gingivostomatitis).
- Recurrent herpes outbreaks may yield a prodrome of burning, tingling, or itching (usually 12–24 hours before blisters). Later, small grouped vesicles form on an erythematous base and last for days to weeks. The recurrences occur at the same anatomic site as the primary eruption (Fig. 11.30).
- Other variants include neonatal herpes simplex virus infection (generalized infection that occurs during birth), herpes gladiatorum (occurs in wrestlers and other contact combatants), disseminated infection (in immunocompromised persons; Fig. 11.31), and eczema herpeticum (HSV superinfection that develops in preexisting atopic dermatitis; Fig. 11.32).

Diagnosis

- The clinical presentation, particularly in recurrent herpetic infections, is typically diagnostic.
- Tzanck preparations reveal acantholytic multinucleated keratinocytes and cytopathic effects.
- A biopsy is usually only required in atypical cases, but the histologic findings are indicative only of a herpes family infection. Immunohistochemical staining can confirm the specific diagnosis in about 24 hours.
- Viral culture has been supplanted by PCR at all major reference laboratories, but, from a clinical perspective, the specimen is obtained in the same manner as a culture specimen.

Treatment

- Topical therapy (penciclovir, 1% cream; acyclovir, 5% ointment; docosanol, 10% cream) is applied multiple times per day. In general, topical treatment is often less effective than oral medication.
- Oral therapies include the following:
  - Acyclovir (primary HSV, 400 mg tid or 200 mg five times/day for 10 days; recurrent HSV, 400–800 mg tid for 5 days; chronic suppression, 400 mg PO bid; pregnant HSV patients in their third trimester, 400 mg tid until delivery; disseminated HSV, 5–10 mg/kg IV for 7 days)
  - Famciclovir (primary HSV, 250 mg tid for 10 days; recurrent HSV, 500 mg tid for 5 days, 125 mg bid for 5 days, or 1 g PO bid for 1 day; chronic suppression, 250 mg bid)
  - Valacyclovir (primary HSV, 1 g bid for 10 days; recurrent HSV, 500 mg bid for 3 days; chronic suppression, 250–1000 mg qd).
- Foscarnet and cidofovir are reserved for acyclovir-resistant HSV infections.

Fig. 11.29. Recurrent herpes labialis in a mother associated with primary facial herpes simplex infection in her daughter. This case demonstrates that primary infection is typically more severe than recurrent infection. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.30. Recurrent herpes progenitalis demonstrating small grouped uniform blisters on an erythematous base. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.31. Patient with underlying lymphoma and localized progressive sacral herpes simplex infection. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.32. Eczema herpeticum in a patient with underlying atopic dermatitis and generalized small uniform blisters. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Hand, Foot, and Mouth Disease ICD10 code B08.4

Pathogenesis

Hand, foot, and mouth disease (HFMD) is an infection caused chiefly by coxsackievirus group A viruses, with the most common cause being A16. Less often, the disease may be caused by coxsackievirus groups A4, A5, A6, A7, A9, and A10, coxsackievirus groups B1, B2, B3, and B5, or enterovirus 71. Transmission is fecal-oral. HFMD tends to occur in miniepidemics during the summer months.

Clinical Features

- Typically, young children are affected, but the virus may also affect adolescents and adults on occasion.
- The incubation period is brief (3–6 days).
- A brief prodrome of low-grade fever, malaise, anorexia, and abdominal pain may be present.
- Primary lesions are round to oval erythematous papules, with central vesicles and a cloudy or opalescent appearance.
- Lesions arise most often on the hands (Fig. 11.33) and feet (11.34). At other anatomic sites, the primary lesions may simply be red macules, with variable scale or crust.
- The number of lesions varies widely, from only a few to over 100.
- Although the hands and feet are most often involved, other common sites include the anogenital area (Fig. 11.35), buttocks, and flexural areas.
- An enanthem may affect the buccal mucosa, tongue, soft palate, or gingiva and is seen in about 90% of patients as round to oval erosions on an erythematous base, which can be painful (Fig. 11.36).
- One or more nails can be shed (onychomadesis).
- Lymphadenopathy is present in about 20% of cases.
- Lesions resolve without scarring.

Diagnosis

- The clinical presentation of a young child (usually <4 years old) with low-grade fever and lesions on the hands, feet, and oral mucosa is usually sufficient for a presumptive diagnosis.
- Problematic or severe cases may be diagnosed with viral cultures of the oral pharynx or the fluid aspirated from vesicles. Material from these same sites can also be tested by PCR-based modalities.

Treatment

- The disease is self-limited and only symptomatic, and supportive treatments are used. There is no specific antiviral therapy.

Clinical Course

The lesions of the skin and mucous membranes resolve in 3 to 10 days; however, the virus excretion in stool may persist for up to 2 weeks and can provide a source of infection to others. Cases caused by enterovirus 71 are more likely to cause neurologic problems, including encephalitis, and/or cardiopulmonary involvement.

Fig. 11.33. Characteristic oval opalescent blister of hand, foot, and mouth disease on an erythematous base of a finger in a young child. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.34. Oval opalescent blister of hand, foot, and mouth disease on an erythematous base on the toe. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.35. Rare oval blisters of hand, foot, and mouth disease with crusted macules on the genital area of a young girl. Lesions that are not located on the hands and feet are frequently not vesiculated.

Fig. 11.36. Two typical erosions of hand, foot, and mouth disease on an erythematous base on the tongue of a child. (From the William Weston Collection, Aurora, CO.)

Bullous Fixed Drug Eruption ICD10 code L27.1

Common Causes of Fixed Drug Eruption
- Acetaminophen
- Antimalarials
- Barbiturates
- Fluoroquinolones
- Nonsteroidal antiinflammatory drug (NSAIDs)
- Penicillins
- Phenolphthalein
- Tetracyclines (class effect)
- Trimethoprim-sulfamethoxazole

Pathogenesis

Fixed drug eruptions (FDEs) are reactions produced by drugs—and rarely by foods—that are localized (fixed) to one or more mucocutaneous sites. More than 100 drugs have been documented to produce this reaction (see box). The pathogenesis of FDE remains unknown, but studies have suggested that T and B cells are stimulated by the causative drug, and skin damage is due to antibody-dependent cell cytotoxicity.

Clinical Features

- An initial episode occurs 1 to 2 weeks after drug exposure, but subsequent exposures can trigger an effect within hours.
- Usually, only one site is affected in a first episode, but subsequent episodes can involve the initial site and one or more additional sites.
- The primary lesion is an erythematous macule that rapidly becomes an erythematous plaque (Fig. 11.37).
- The erythema may subside or the lesion may become bullous or ulcerated (Fig. 11.38 and 11.39).
- The lesion resolves with residual hyperpigmentation.
- The face and male genitalia are the sites affected most often.

Diagnosis

- The diagnosis is usually established on clinical grounds, with the presentation of one or more discrete bullous lesions, following ingestion of a drug. The diagnosis is further established if a history reveals that this same site has been involved in other reactions precipitated by the same drug.
- Rare cases may require a drug challenge or a 3- or 4-mm punch biopsy. The histologic findings are not usually specific for only FDE but can strongly suggest the diagnosis.
- Because FDE is common on the male genitalia, and doxycycline is a drug used for a variety of sexually transmitted diseases but can cause FDE, it is often important to establish precisely when an ulceration of the penis began relative to the use of doxycycline.

Treatment

- The implicated drug needs to be discontinued immediately because the lesions will typically progress to ulceration if the drug continues to be administered.
- Topical corticosteroids, when applied early in the course of the reaction, will shorten the duration of the inflammatory phase. The strength of the steroid should be adjusted to the affected skin.

Clinical Course

The duration of FDE is highly variable, but once the offending medication is discontinued, the reaction will usually subside over 1 to 2 weeks. Residual hyperpigmentation may persist for months. If the medication is not discontinued, the lesions may become chronically ulcerated.

Fig. 11.37. Fixed drug eruption produced by trimethoprim-sulfamethoxazole demonstrating an erythematous plaque with early vesiculation.

Fig. 11.38. Bullous fixed drug eruption on the big toe produced by ibuprofen. (From the William Weston Collection, Aurora, CO.)

Fig. 11.39. Bullous fixed eruption on the head of the penis due to tetracycline. Note the focal area of hyperpigmentation, which could indicate pigmentary incontinence from one or more previous episodes.

Bullous Erythema Multiforme ICD10 code L51

Pathogenesis

Erythema multiforme (minor) is an inflammatory reactive condition induced by numerous agents and insults. Recurrent herpes simplex infections cause about 70% of cases. Other causes include medications, other infections (viral, bacterial, and fungal), and collagen vascular diseases. The relationship between erythema multiforme (minor) and Stevens-Johnson syndrome (erythema multiform major) is controversial, and there is clinical overlap. Most cases of erythema multiforme minor are not bullous; the more annular and/or targetoid form of erythema multiforme (minor) is discussed in Chapter 16.

Clinical Features

- Lesions usually develop 7 to 10 days after the causative infection or drug.
- Primary lesions occur precipitously and present as erythematous papules or small plaques, which often (but not always) have a targetoid appearance.
- Some cases demonstrate a central blister, and bullous lesions with classic targetoid lesions may coexist (Figs. 11.40 and 11.41).
- Older bullous lesions may rupture or break down, yielding erosions and shallow ulcers (Fig. 11.42).
- Sites often affected include acral areas, the oral mucosa, and genital areas.
- Lesions may occur in sites of trauma (Koebner or isomorphic phenomena; Fig. 11.43).

Diagnosis

- The presentation of bullous lesions, admixed with targetoid lesions, occurring in a chiefly acral distribution, is usually sufficient for establishing the diagnosis.
- A history of previous episodes (recurrent erythema multiforme) and/or a history of HSV infection (HSV-1 or HSV-2) is important historical information that supports the diagnosis.
- Occasional cases may require a shave or punch biopsy (preferred) to establish the diagnosis better. The histologic findings, although not specific, can strongly support the diagnosis.

Treatment

- Most acute episodes do not require therapy because the condition is self-limited.
- Cases associated with recurrent HSV infection may be treated with suppressive acyclovir, valacyclovir, or famciclovir. A typical suppressive dose of acyclovir is 400 mg PO bid for up to 6 months, and then a test of remission is carried out.
- The use of oral corticosteroids for bullous erythema multiforme is controversial.

Clinical Course

Disease activity in erythema multiforme (minor) is variable, but most patients demonstrate complete resolution of lesions in 1 to 3 weeks. Patients with darker skin may demonstrate residual hyperpigmentation that lasts for months.

Fig. 11.40. Small classic targetoid lesions of erythema multiforme, with some demonstrating small central blisters.

Fig. 11.41. Bullous erythema multiforme with an unusually large blister. Note the adjacent, nonblistered, red papular lesion.

Fig. 11.42. Bullous herpes simplex–induced erythema multiforme, with collapsed blister.

Fig. 11.43. Bullous erythema multiforme demonstrating the Koebner phenomenon due to work-related trauma around the nails.

Stevens-Johnson Syndrome ICD10 code L51.1

Pathogenesis

Stevens-Johnson syndrome (SJS), sometimes referred to as erythema multiforme major, is a hypersensitivity process usually caused by drugs, including antiepileptics, antibiotics, and NSAIDs, and sometimes by infections (e.g., HSV, *Mycoplasma*). The precise nosology of SJS is controversial, with some authorities considering it a disorder sui generis and others considering it on a spectrum with toxic epidermal necrolysis (TEN). This latter viewpoint has prevailed in recent years. Classic SJS is defined as a vesiculobullous disorder with targetoid lesions that affects at least two mucosal surfaces.

Clinical Features

- SJS may affect persons of any age.
- Clinical lesions develop about 1 to 3 weeks after ingestion of a causative drug or after a causative infection, although sometimes SJS may occur within a few days if it is a recurrent episode.
- Patients often demonstrate a prodrome of fever, malaise, and myalgias.
- Cutaneous lesions resemble targetoid lesions of erythema multiforme minor (Fig. 11.44) and may become bullous (Fig. 11.45).
- Lesions may involve the following:
  - <10% of body surface area—considered classic SJS
  - 10% to 30% of body surface area—considered SJS-TEN overlap
  - >30% body surface area—often considered simply as TEN
- Lesions are often painful and/or may produce a burning sensation.
- Older bullous lesions may rupture or collapse, with the epidermis shed, yielding superficial ulcers.
- The ocular mucosa, lips, oral mucosa (see Fig. 11.44), anogenital mucosa (Fig. 11.46), and lung mucosa (e.g., pneumonitis, bronchitis) may be involved.
- Lesions may occur in sites of trauma (Koebner or isomorphic phenomena).

Diagnosis

- The classic presentation of admixed bullous lesions, atypical bullous targetoid lesions, and involvement of at least two mucosal surfaces is sufficient for establishing the diagnosis.
- A history of new medications within the past 3 weeks, or an infection, especially with *Mycoplasma,* supports the diagnosis.
- Biopsies should be performed for standard H&E examination and for DIF studies to exclude autoimmune bullous conditions that can mimic SJS (e.g., paraneoplastic pemphigus).

Treatment

- All patients should be hospitalized for supportive therapy to include IV hydration, a controlled diet, thermoregulation, pain control, and mouth rinses and emollients.
- Potentially causative drugs must be discontinued as soon as possible.
- Cases associated with possible recurrent HSV infection may be treated with antivirals; cases of suspected *Mycoplasma* pneumonia should be treated with antibiotics.
- Use of oral corticosteroids in bullous erythema multiforme is controversial, but most evidence suggests that high-dose, short-duration steroid regimens may be used early in the disease course.

Clinical Course

The degree of severity in SJS is variable, but most patients demonstrate complete resolution of lesions in 2 to 3 weeks. Some morbidity may occur when the ocular mucosa is involved, and liberal ophthalmologic consultation should be used. The mortality rate in severe cases approaches 5%.

Fig. 11.44. *Mycoplasma*-induced Stevens-Johnson syndrome, with involvement of the ocular mucosa, lips, oral mucosa, and skin. All patients with ocular involvement should have an ophthalmologic consultation.

Fig. 11.45. Uniform vesicles and bullae of Stevens-Johnson syndrome on the arm. The extremities are the cutaneous site that is most likely to be affected.

Fig. 11.46. Erosions on the male genitalia in a case of Stevens-Johnson syndrome precipitated by herpes labialis.

Toxic Epidermal Necrolysis ICD10 code L51.2

Common Causes of Toxic Epidermal Necrolysis

- Drugs
  - Allopurinol
  - Barbiturates
  - Hydantoin
  - NSAIDs
  - Penicillins
  - Sulfonamides
- Immunizations
- Infections
  - Herpes simplex
  - *Mycoplasma*
  - Systemic fungal infections

Pathogenesis

TEN is a life-threatening, severe hypersensitivity reaction to a drug (most common), infection or, rarely, an immunization and represents a dermatologic emergency. Many authorities consider it to be a severe variant of Stevens-Johnson syndrome (see previous section). For some drugs, there is evidence of a genetic predisposition to develop TEN.

Clinical Features

- TEN may affect any age group.
- Lesions develop about 1 to 3 weeks after a causative drug (or infection), but some drug-induced cases may develop quickly.
- Patients typically complain of skin pain and/or skin burning and may develop erythema of the skin, which rapidly becomes confluent, resembling a sunburn (Fig. 11.47).
- By definition (see earlier, "Stevens-Johnson Syndrome"), from 30% to 100% of the skin surface is involved.
- Fully developed lesions consist of sheets of necrotic epidermis that shear easily, leaving an erythematous raw base (Figs. 11.48 and 11.49).
- The Nikolsky sign may be present, where the skin will denude with lateral pressure.
- The ocular mucosa, lips, oral mucosa, anogenital mucosa, and sinopulmonary epithelium may be involved.

Diagnosis

- The classic presentation of painful erythema, resembling severe sunburn, that easily denudes and occurs after ingestion of a new medication, is strongly suggestive of the diagnosis.
- A positive Nikolsky sign is also strongly supportive of the diagnosis (see page 166).
- All cases should be biopsied for H&E and direct immunofluorescence because this clinical pattern maybe mimicked by other severe bullous disorders, such as pemphigus, paraneoplastic pemphigus, and drug-induced, linear, IgA bullous dermatosis.
- All patients should have a complete blood count (CBC) and comprehensive metabolic panels (to include kidney and liver function).

Treatment

- All patients should be hospitalized, preferably in a burn unit, for supportive therapy. This should include proper hydration, a controlled diet, thermoregulation, mouth rinses, eye care, analgesics, and emollients.
- Immediately withdraw any potentially causative drugs.
- As the skin denudes, replacement with some form of appropriate dressing should be considered.
- Prophylactic antibiotics are not used, but the threshold for culture and starting antibiotics is low.
- Second-line and controversial therapies include IVIG, cyclosporine, plasmapheresis, and systemic corticosteroids.
- There should be liberal ophthalmology consultation for patients with any possible ocular involvement.

Clinical Course

Poor prognostic factors include age older than 40 years, associated malignancy, more than 10% of the body surface detached, tachycardia more than 120 beats/min, and elevated serum urea (>10 nmol/L), elevated serum glucose (>14 nmol/L), and low serum bicarbonate (<20 nmol/L) levels. The mortality rate has approached 40% in some studies (Fig. 11.49). There is a validated prognostic scale for clinical use (SCORETEN) that may be used.

Fig. 11.47. Hydantoin-induced early toxic epidermal necrolysis manifesting as painful erythema. Note the early blister formation on the small finger.

Fig. 11.48. Developed toxic epidermal necrolysis demonstrating sheets of partially detached epidermis and a raw denuded base.

Fig. 11.49. Fatal case of captopril-induced toxic epidermal necrolysis demonstrating sheets on partially detached epidermis associated with a glistening denuded base. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Bullous Pemphigoid ICD9 code L12.0

Pathogenesis

Bullous pemphigoid (BP) is an autoimmune bullous disease that usually occurs in elderly patients, although any age group may be affected. The incidence of BP has tripled in the past 10 years as the population of the United States has aged. BP is mediated by IgG autoantibodies (BPAg1 and BPAg2) directed against portions of the hemidesmosome, a structure necessary for normal attachment of the epidermis to the dermis. This deposition results in an inflammatory milieu that causes chemotaxis of inflammatory cells, particularly eosinophils. It is unknown why these autoantibodies develop.

Clinical Features

- Typically BP affects elderly patients, and it is more common in patients with multiple comorbidities, including neurologic disorders (e.g., dementia, Parkinson disease).
- Urticarial plaques, or tense blisters, are common (Figs. 11.50 and 11.51). Either or both forms of disease may be present in the same patient.
- The Nikolsky sign is absent.
- The most common location is the lower extremity, although any skin surface may be affected.
- Older lesions demonstrate a raw, denuded base (Fig. 11.52).
- Oral lesions are uncommon, although some studies have reported that 20% of patients have mucosal lesions.

Diagnosis

- The occurrence of fixed urticarial lesions and tense bullae is suggestive, especially in an elderly patient.
- Some bullous drug eruptions mimic BP, clinically and histologically, and a careful drug history must be taken.
- A biopsy (shave, punch, or small excision) of an early urticarial lesion, or a new blister, is useful to establish the diagnosis.
- DIF is also useful to establish the diagnosis; this requires a biopsy from perilesional skin (≈0.5–1 cm away from a blister). This specimen needs to be placed in immunofluorescent transport medium, in normal saline (for 24–48 hours), or snap frozen.
- DIF studies demonstrate IgG and/or complement component C3 deposited in a linear fashion at the dermoepidermal junction.
- Indirect immunofluorescent studies have lesser sensitivity (positive in 50%–80% of patients).

Treatment

- Those with a mild case and/or localized disease may be managed with potent topical corticosteroids.
- Moderate to severe cases are managed first with oral prednisone (≥0.5 mg/kg per day), with the understanding that many elderly patients have comorbidities (e.g., diabetes) that may complicate use.
- After controlling the disease with oral corticosteroids, steroid-sparing agents are generally used. These may include doxycycline (100 mg PO bid) with nicotinamide (500 mg PO qid), dapsone (typical starting dose, 50 mg/day), and methotrexate (5–15 mg as a weekly dose).
- Treatments used less often include azathioprine, cyclophosphamide, mycophenolate, methotrexate, chlorambucil, plasmapheresis, IV gamma globulin, and rituximab.

Clinical Course

BP is often considered to be an autoimmune disease with a low mortality rate, but the degree of discomfort (especially pruritus) experienced by elderly patients is substantial. Moreover, elderly persons with extensive disease demonstrate increased mortality rates (as high as 31% in 6 months). Current literature has indicated that half of patients will go into clinical remission within 2.5 to 6 years although, for some patients, the disease may continue for 10 years or longer.

Fig. 11.50. Typical tense blisters of bullous pemphigoid on an erythematous base. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.51. Tense blisters of bullous pemphigoid in combination with urticarial lesions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.52. Tense blisters of bullous pemphigoid with a typical eroded base when the blisters break. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Dermatitis Herpetiformis ICD10 Code L13.0

Pathogenesis

Dermatitis herpetiformis (DH) is a subepidermal vesiculobullous disease caused by IgA autoantibodies directed against a component of the basement membrane zone, tissue transglutaminase 3 (Fig. 11.53). Less often, antireticular antibodies, antiendomysial antibodies, and/or antigliadin antibodies (especially children) are present. DH is strongly associated with gluten-sensitive enteropathy. The prevalence of DH in the United States has been estimated to be between 1 and 39 cases per 100,000 persons.

Clinical Features

- Males and females are equally affected and, most often, the disease begins in the fifth decade of life. Actually, any age group may be affected.
- Primary lesions are small (1–5 mm), intensely pruritic blisters on an erythematous base (Figs. 11.54–11.56) that are often grouped (herpetiform). Large bullae are uncommon.
- Often, the appearance is complicated by excoriations because of the intense pruritus.
- Characteristic sites of involvement include the elbows, knees, buttocks, and occipital scalp.

Diagnosis

- A prolonged history of intensely pruritic small vesicles, in characteristic areas, suggests the diagnosis. The occurrence of lesions on the scalp, buttocks, elbows, and knees is a pattern not seen in most other bullous disorders.
- A biopsy of a new lesion, and not an excoriation, may suggest strongly the diagnosis.
- The diagnosis may be further substantiated by DIF studies performed on perilesional skin. DH is characterized by the deposition of granular IgA in the papillary dermis (Fig. 11.53).

Treatment

- The treatment of choice for DH is dapsone (25–150 mg/day), with improvement occurring rapidly after initiating the drug.
- Alternative treatments include sulfapyridine (2–4 g PO daily) or colchicine (up to 0.6 mg PO tid) in patients who cannot tolerate dapsone.
- A gluten-free diet may be used, but adherence can be problematic, and it may take 3 to 12 months to demonstrate significant improvement.
- It is also important to realize that iodides and NSAIDs, especially indomethacin, may exacerbate DH.
- Because of the strong association with gluten-sensitive enteropathy (celiac disease), patients should be referred to a gastroenterologist for further testing.

Clinical Course

DH is a chronic lifelong disease that frequently wanes in intensity as patients age.

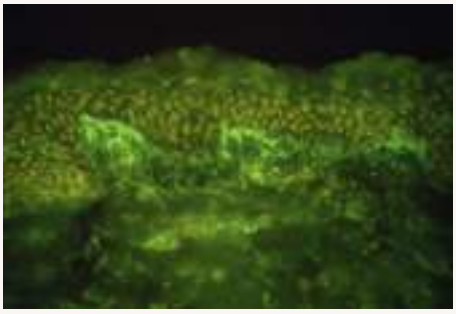

Fig. 11.53. Direct immunofluorescence demonstrating deposition of granular IgA along the basement membrane zone in a patient with dermatitis herpetiformis.

Fig. 11.54. Dermatitis herpetiformis, with blisters and excoriations. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.55. Dermatitis herpetiformis presenting primarily with excoriations. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.56. Close-up of dermatitis herpetiformis demonstrating admixture of small unilocular vesicles and excoriations. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Herpes Gestationis ICD10 Code O26.4

Pathogenesis

Herpes gestationis (gestational pemphigoid, pemphigoid gestationis) is an autoimmune bullous condition caused by IgG antibodies directed primarily against BPAg2 (occasionally BPAg1), a structure necessary for adherence of the epidermis to the basement membrane zone (Fig. 11.57). It is, in essence, BP occurring in gravid or recently gravid women. The condition occurs nearly exclusively during pregnancy or shortly thereafter and is less often associated with trophoblastic malignancy or molar pregnancy. The incidence has been calculated to be anywhere from 1:3000 to 1:60,000 pregnancies.

Clinical Features

- The condition affects pregnant women or recently pregnant women. The disease usually occurs in the latter portion of pregnancy or following delivery.
- Lesions can be fixed, red, urticarial plaques, tense blisters, or a combination of these two primary lesions (Figs. 11.58–11.60).
- Characteristic areas of involvement include the intertriginous and periumbilical areas.
- The symptoms are typically pruritic.

Diagnosis

- The clinical presentation of a pregnant or recently pregnant woman who presents with a sudden onset of fixed red plaques, with or without blisters, is highly suggestive of the diagnosis.
- Characteristic involvement of the intertriginous and periumbilical areas also supports the diagnosis.
- A punch biopsy of lesional skin should be done for routine histologic examination. The findings are diagnostic not only of herpes gestationis but also can strongly support and exclude other clinical possibilities.
- A biopsy of perilesional skin should be performed for DIF studies. Linear deposition of C3, with or without IgG, at the dermoepidermal junction is diagnostic in this context.

Treatment

- Treatment of choice is oral prednisone, with a usual initial dose being 40 to 60 mg. Because the disease is generally self-limited and resolves over a period of days, weeks, or months after delivery, the therapy usually does not have to be sustained.
- Rare patients may demonstrate disease for years afterward, and steroid-sparing agents are used.

Clinical Course

Most cases resolve in the postpartum period, usually over days, weeks, or months. Occasional cases may persist for years or be perpetuated by use of oral contraceptives. Although early studies have suggested an adverse effect on the fetus, more recent studies have concluded that there is usually no adverse effect on the fetus. Herpes gestationis may be transmitted to the neonate, but this is very rare. Neonates with herpes gestationis experience spontaneous resolution within weeks after birth as the maternal antibodies are lost.

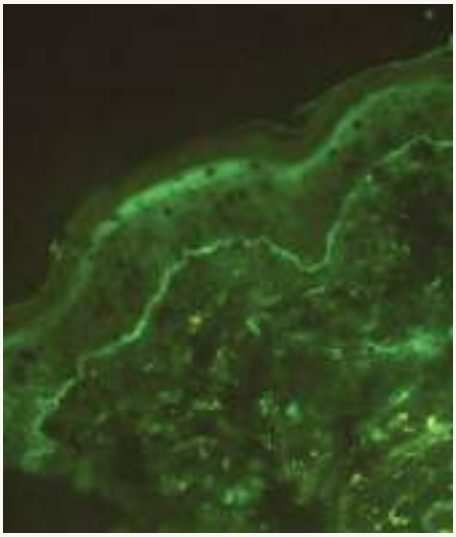

Fig. 11.57. Linear IgG directed against the basement membrane zone in a patient with herpes gestationis.

Fig. 11.58. Arcuate urticarial lesions in herpes gestationis. Note involvement of the umbilicus. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.59. Postpartum herpes gestationis demonstrating urticarial lesions and tense blisters. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.60. Tense blisters and urticarial lesions in herpes gestationis. Interdigital blisters are common in this disorder. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Linear IgA Bullous Dermatosis ICD10 code L13.8

Drug-Induced Linear IgA Bullous Dermatosis
- Ampicillin-sulbactam (rare)
- Benazepril (rare)
- Carbamazepine (rare)
- Ceftriaxone-metronidazole (rare)
- Gemcitabine (rare)
- Naproxen (rare)
- Piroxicam (rare)
- Sulfadimethoxine (rare)
- Vancomycin (common)

Pathogenesis

Linear IgA bullous dermatosis (LABD) is a rare autoimmune bullous condition in which IgA autoantibodies are directed against a structural component of the basement membrane zone between the epidermis and dermis (Fig. 11.61). Most cases are idiopathic, but a significant number of cases are drug-induced (see box). When it occurs in children, it has also been termed *chronic bullous disease of childhood.*

Clinical Features

- LABD may affect children and adults.
- Both minute vesicles and large tense bullae may be seen, sometimes on an erythematous base (Fig. 11.62).
- Blisters may be arranged in groups or annular configurations, sometimes likened to a string of pearls (Fig. 11.63), or with sausage or beanlike shapes (Fig. 11.64).
- Lesions are often symmetrically distributed on extensor surfaces, especially the back and neck.
- In severe cases, the blisters may be large and generalized, mimicking those of TEN.
- Oral involvement is rather common and usually consists of oral erosions and ulcerations.
- The blisters are usually pruritic.

Diagnosis

- The clinical presentation, particularly in a child, can be persuasive, particularly because other autoimmune disorders are relatively uncommon in children.
- Annular configurations of blisters, arranged as a string of pearls, strongly suggest the diagnosis.
- In adults, vancomycin use should prompt consideration of drug-induced LABD.
- A shave or punch biopsy is often useful in suggesting the diagnosis, but other autoimmune blistering diseases share similar histologic features.
- The diagnosis is established definitively via a punch or shave biopsy of perilesional skin for DIF studies to demonstrate a linear band of IgA autoantibodies.

Treatment

- Oral prednisone is used initially for quick control, usually at a dose of 0.5 to 1.0 mg/kg per day, with tapering as the condition improves or as steroid-sparing agents are added.
- Dapsone (25–100 mg PO qd) is the steroid-sparing drug used most often.
- Sulfapyridine and colchicine are other steroid-sparing agents that are used less often.

Clinical Course

LABD may last for months or years, especially in children. Drug-induced forms of LABD (vancomycin is a common offender) usually resolve quickly with withdrawal of the offending drug.

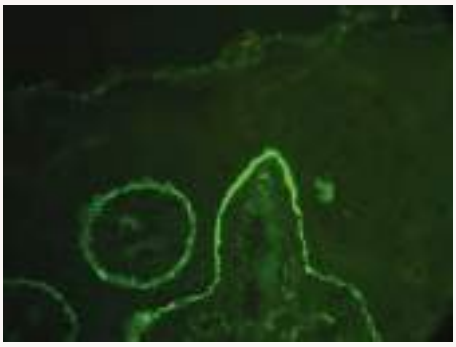

Fig. 11.61. Linear IgA autoantibodies directed against the basement membrane zone in a patient with linear IgA bullous dermatosis.

Fig. 11.62. Small to large tense blisters associated with erosions in a patient with vancomycin-induced, linear IgA bullous dermatosis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.63. Chronic bullous disease of childhood demonstrating characteristic blisters, with a string of pearls arrangement.

Fig. 11.64. Close-up of a child with chronic bullous disease of childhood with tense blisters, some of which demonstrate a bean or sausage shape. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Porphyria Cutanea Tarda ICD10 code E80.1

GENETIC DISORDER

Pathogenesis

Porphyrias represent a group of inherited, or rarely acquired, disorders of porphyrin metabolism, which produce blisters in the skin. Porphyria cutanea tarda (PCT) is the most common of these disorders, with an estimated incidence of about 1:25,000 in the United States. It is due to an inherited deficiency of uroporphyrinogen decarboxylase. Precipitating and/or aggravating factors include hepatitis C infection, alcohol abuse, estrogens, and general iron overload.

Clinical Features

- PCT may occur at any age, but it usually affects middle-aged individuals of both genders.
- Primary lesions include thick-walled blisters, often on the back of the hands (photoexposed skin).
- The blisters often lack erythema or inflammation, although hemorrhage is not uncommon (Figs. 11.65 and 11.66).
- Patients often report that minor trauma produces blisters or erosions (see Figs. 11.65 and 11.66) on the back of the hands and fingers.
- Hypertrichosis may be noticeable on the upper cheeks and temporal areas (Fig. 11.67).
- Hyperpigmentation of the face or conjunctival injection (so-called traveling salesman eyes) may be noted.
- Patients can develop scarring and milia formation at the sites of previous blisters.
- Rare patients demonstrate induration of the scalp, arms, or upper trunk indistinguishable from that of morphea or even progressive systemic sclerosis (scleroderma).

Diagnosis

- PCT should always be included in the differential diagnosis of tense blisters on the hands.
- A skin biopsy, although not diagnostic only of PCT, often strongly suggests the diagnosis.
- If high levels of porphyrins are present in the urine, a freshly voided sampled will demonstrate coral red fluorescence when examined with a Wood lamp (Fig. 11.68). If more moderate levels of porphyrins are present, the urine will demonstrate coral red fluorescence only in the meniscus (Fig. 2.1). Sometimes, examination of the urine will not demonstrate any remarkable findings, even when PCT is present.
- The diagnosis is best established by measuring a 24-hour urine collection for total porphyrins. Values of 300 μg (or >800 μg if active lesions are present) will be observed.
- Serum iron levels, a CBC, and liver function tests (LFTs) should be done on all patients.

Treatment

- Discontinue potential aggravating factors, such as estrogen or alcohol.
- Phlebotomy is a safe and effective method for depleting hepatic iron and results in improvement. Typically, 1 unit of blood (500 mL) is removed each week until the hemoglobin level reaches 11 g/dL. Patients will typically go into remission 3 to 6 months after beginning therapy.
- Hydroxychloroquine may be used cautiously—250 mg PO once or twice weekly. Note that daily doses may lead to liver failure in this patient population.

Clinical Course

Because this is a genetic disorder, it cannot be cured but, in general, the withdrawal of exacerbating agents, phlebotomy, and/or low-dose hydroxychloroquine will place most patients in complete remission.

Fig. 11.65. Large bulla of the finger of a patient with porphyria cutanea tarda associated with numerous erosions and crusts. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.66. Close-up of a tense blister and finger in a patient with porphyria cutanea tarda. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 11.67. Hypertrichosis and hyperpigmentation in a patient with chronic porphyria cutanea tarda. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

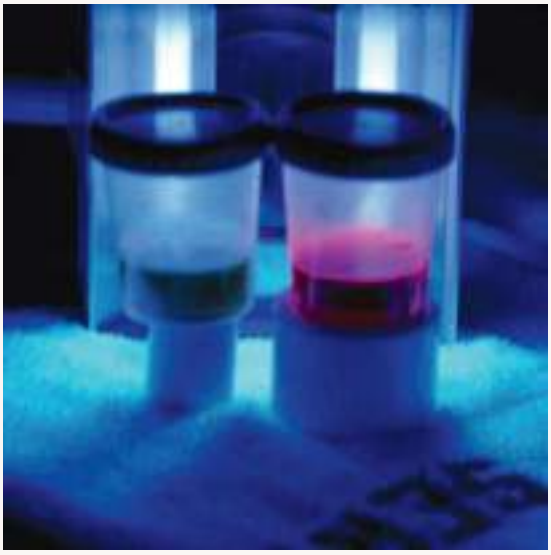

Fig. 11.68. Wood light examination of normal urine *(left)* and urine with coral red fluorescence from a patient with porphyria cutanea tarda *(right).*

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Chapter 12
Pustular Eruptions, Nonfollicular

Key Terms

Acrodermatitis continua of Hallopeau
Impetigo herpetiformis
Pustulosis of the palms and soles

Pustules are defined as papular lesions filled with an exudate of acute inflammatory cells. In most cases, the acute inflammatory cells are neutrophils; however, less often the cells are eosinophils or an admixture of the two cell types. This chapter excludes pustular lesions that are follicular based (acute folliculitis), which is discussed in Chapter 23. Not all pustular eruptions are discussed in this chapter (see box).

Pustular Eruptions

- Acute generalized exanthematous pustulosis
- Acropustulosis of infancy
- Candidiasis
- Intraepidermal immunoglobulin A (IgA) pemphigus
- Pustular psoriasis
- Reactive arthritis (Reiter disease)
- Pustular arthropod reactions
- Subcorneal pustular dermatosis
- Transient neonatal pustular melanosis

IMPORTANT HISTORY QUESTIONS

How long have the pustules been present?

Some pustular reactions develop acutely, such as pustular drug eruptions or pustular arthropod reactions, whereas pustular psoriasis and reactive arthritis may be chronic or recurring.

Do you have a known personal or family history of psoriasis?

Pustular psoriasis can be tricky to diagnose when it initially presents. The presence of a personal or family history of psoriasis would strongly suggest the possibility of pustular psoriasis.

Do you have a past or current history of arthritis or painful joints?

This question is obviously looking for potential joint disease due to psoriasis or reactive arthritis.

Have you started any new medications?

This is a very important questions because pustular drug eruptions are always high in the differential diagnosis. One should be suspicious of any antibiotic, especially if it belongs to the penicillin class. This question is also important even for patients with known psoriasis because a number of drugs (e.g., oral or intramuscular corticosteroids, terbinafine) will precipitate a pustular reaction in an otherwise classic plaque type of psoriasis.

Had you spent any time outdoors before you developed the rash?

This question is directed at finding any potential source of pustular arthropod reactions.

Does anyone else in the family have a rash?

This question is directed at finding a potential common arthropod exposure, such as flea bites.

How are you treating this rash?

Many patients use home-based, over-the-counter (OTC), or prescription remedies that may alter a reaction. One of the most common is a topical corticosteroid, which may actually produce follicular pustules and confuse the clinical picture.

IMPORTANT PHYSICAL FINDINGS

How old is the patient?

Some pustular disorders occur in young children (e.g., acropustulosis of infancy), others are primarily in young adults (e.g., vaccinia infection), and others occur in any age group.

What are the distribution and arrangement of the pustules?

Some pustular disorders have a distinct distribution (e.g., acropustulosis of infancy, acrodermatitis continua). Some pustular disorders present as solitary lesions, whereas others may demonstrates annular or circinate arrangements (e.g., some cases of pustular psoriasis, intraepidermal IgA pemphigus).

Are the pustules based on hair follicles or non-follicular skin?

If the pustules are based on hair follicles, refer to Chapter 23.

Acute Generalized Exanthematous Pustulosis ICD10 code L27.0

Drug-Induced Pustular Drug Eruptions

Analgesics
- Acetaminophen

Antimalarial Agents
- Hydroxychloroquine (Plaquenil)
- Quinidine

Antipsychotic Agents
- Olanzapine

Antibiotics
- Amoxicillin
- Ampicillin
- Cefazolin
- Cephradine
- Cephalexin
- Clindamycin
- Cotrimazole
- Metronidazole
- Penicillin
- Norfloxacin
- Vancomycin

Antiseizure Agents
- Carbamazepine
- Phenytoin

Calicum Channel Blockers
- Nifedipine

Miscellaneous
- Chromium picolinate
- Mercury
- Radiocontrast dye

Pathogenesis

Acute generalized exanthematous pustulosis (AGEP) is a reproducible pustular drug hypersensitivity produced by many drugs; the most common offenders are antibiotics (cephalosporins, cotrimoxazole are most frequently implicated), anticonvulsants, and hydroxychloroquine. This distinct drug eruption has been reproduced with topical patch testing; however, the exact immunologic basis for this reaction is not understood.

Clinical Features

- The patient has a history of a new medication within the past 1 to 5 days.
- There is an acute (often dramatic) onset of macular (typically confluent) erythema that can affect any site, although it usually affects large areas of the trunk and proximal extremities.
- Erythema studded with varying numbers of 1- to 2-mm pustules (Figs. 12.1–12.3) is found. Pustules may be present on some regions of the body and absent on others.
- Less commonly, patients may demonstrate erythematous indurated papules or small plaques that may resemble erythema multiforme.
- Patients may complain of burning, itching, or both.
- A low-grade fever is common.

Diagnosis

- The history of a new drug (especially antibiotics), combined with toxic erythema and pustules, is very strongly suspicious of AGEP.
- Complete blood count (CBC). Leukocytosis is commonly present.
- Typically, a 3- or 4-mm punch biopsy will demonstrate a subcorneal or, less commonly, a follicular-based pustule containing numerous neutrophils, with variable numbers of eosinophils. The biopsy results, although not specific, can be strongly supportive of the diagnosis.

Treatment

- Withdraw the suspected offending drug(s).
- No treatment is necessary in most cases because this is a self-limited disease.
- Sedating antihistamines such as diphenhydramine can be used for patient comfort at night.
- Medium-potency corticosteroids (e.g., triamcinolone, fluocinonide) in a cream or ointment base can be used for for pruritus.
- Severe cases may require a short burst of oral prednisone (typically, 40 mg for 3 or 4 days).
- Patients need to be labeled as allergic to the implicated drug because these reactions will occur with subsequent challenge.

Clinical Course

The erythema typically fades over several days, followed by desquamation similar to that seen in sunburn.

Fig. 12.1. Numerous small pustules on a background of erythema caused by amoxicillin.

Fig. 12.2. Acute generalized exanthematous pustulosis due to ceftriaxone. This lesion demonstrates uniform pustules, background erythema, and early desquamation.

Fig. 12.3. Close-up of a pustular drug eruption due to hydroxychloroquine that demonstrates erythema studded with small pustules. This eruption is several days old, and there is already early desquamation of the top layer of skin.

Pustular Psoriasis ICD 10 codes L40.1, L40.2, and L40.3

GENETIC DISORDER

Pathogenesis

The pathogenesis of pustular psoriasis is the same as for classic papulosquamous psoriasis in that it is a genetic disorder with a trigger, such as an infection. Patients may demonstrate features of both the papulosquamous and pustular types or move back and forth between the two phenotypic presentations. In some cases, pustular psoriasis may be precipitated by oral corticosteroids. The reason for this is not understood.

Implicated Drugs in Pustular Psoriasis

- Aceclofenac
- Antitumor necrosis factor therapy (e.g., adalimumab, etanercept, infliximab)
- Clopidogrel
- Fexofenadine
- Systemic corticosteroids
- Terbinafine

Clinical Features

- Patients may have a past, present, or family history of plaque-type or pustular psoriasis.
- Patients may demonstrate a localized (e.g., confined to palms and soles) or generalized distribution.
- The primary lesion is diffuse erythema studded with pustules that are not infrequently distributed around the edges in an annular fashion (Fig. 12.4).
- Pustular psoriasis confined to the fingers is frequently associated with marked nail dystrophy and underlying arthritis.
- A patient experiencing acute flares may demonstrate associated fever and leukocytosis.
- Patients are more likely to have associated active psoriatic arthritis.
- Patients with pustular psoriasis are more likely to develop geographic tongue, scrotal tongue, and iritis.
- Rare cases may be life-threatening, with associated shock and/or renal failure.
- **Impetigo herpetiformis** is now considered to be acute pustular psoriasis associated with pregnancy.
- **Pustulosis of the palms and soles** (pustulosis palmaris et plantaris) is a variant that was formerly known as pustular bacterid (of Andrews) in older texts (Fig. 12.5).
- **Acrodermatitis continua of Hallopeau** is a rare variant of pustular psoriasis. It consists of pustules on one or more distal fingers or, less commonly, on the toes (Fig. 12.6). This variant is often associated with nail dystrophy and distal psoriatic arthritis.

Diagnosis

- The diagnosis should be suspected in a patient with a personal or family history of psoriasis who has an acute or chronic pustular eruption.
- Peripheral leukocytosis is commonly present.
- A 3- or 4-mm punch biopsy of a pustular area will demonstrate a subcorneal pustule containing neutrophils. Although not specific, the histologic findings are often supportive.
- X-ray studies are indicated in the acrodermatitis continua of Hallopeau variant to exclude underlying psoriatic arthritis.

Treatment

- Withdraw oral corticosteroids or offending drugs, if possible.
- The recommended treatment is an oral retinoid, with etretinate being the treatment of choice. It can be combined with light therapy (narrow-band ultraviolet B [UVB], UVB, or psoralen and ultraviolet A [PUVA]).
- Treat with a biologic agent, such as adalimumab, etanercept, or infliximab. Paradoxically, some biologic agents have also been reported to precipitate pustular psoriasis.
- Oral cyclosporine, dapsone, and methotrexate have also been anecdotally reported to be useful.
- A medium-potency corticosteroid (e.g., triamcinolone, fluocinonide) in a cream or ointment base is helpful, although most cases only demonstrate partial improvement.

Fig. 12.4. Patient with generalized pustular psoriasis presenting as markedly erythematous plaques, with numerous small pustules arranged around the periphery of the lesions.

Fig. 12.5. Patient with pustular psoriasis of the palms and soles. This is a close-up of the instep of the foot. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 12.6. Hand of a patient with acrodermatitis continua demonstrating marked erythema, pustules, crust, and destruction of the nail.

Acropustulosis of Infancy ICD10 code L08.89

CAUSE UNKNOWN

Pathogenesis

Acropustulosis of infancy, also known as **infantile acropustulosis,** is, as the name implies, a pustular disorder that tends to affect the acral areas of infants. The pathogenesis is not understood, although there is a higher than expected incidence of atopic dermatitis. There also appears to be a higher than expected incidence in warmer climates, suggesting the possibility of an exaggerated arthropod reaction.

Clinical Features

- Typically, this first develops in infants between the ages of 2 and 6 months.
- This disorder may affect infants of any ethnic group but is more common in children with a darker skin color.
- Lesions classically recur in crops every 2 to 6 weeks.
- The primary lesion appears as markedly pruritic. 1- to 2-mm pustules on an erythematous base (Fig. 12.7). In some cases, the primary lesions may have the appearance of cloudy vesicles.
- As the name implies, the distribution is primarily to the feet (Fig. 12.8) and hands (Fig. 12.9), although lesions may extend more proximally. In rare cases, lesions may affect the head and neck area or trunk.
- Lesions typically resolve spontaneously over 1 to 3 weeks.

Diagnosis

- The clinical presentation of crops of small pruritic pustules on an erythematous base in an infant, particularly an infant with darker skin, is essentially diagnostic, although the differential diagnosis still includes scabies or another arthropod reaction.
- Important features include the absence of pruritic lesions in other members of the family. If other members of the family are affected, an arthropod reaction, especially scabies, needs to be excluded.
- In difficult cases, the lesions can be scraped for a mineral preparation to exclude scabies. The contents of the blister can also have Wright staining performed because the presence of numerous neutrophils favors acropustulosis of infancy, and the presence of numerous eosinophils would favor an arthropod reaction.
- A biopsy can be done in problematic cases and can be strongly supportive of the diagnosis; however, in most cases, it is not needed.

Treatment

- Topical corticosteroids are the mainstay of therapy. This disorder usually requires potent to superpotent topical corticosteroids.
- In severely pruritic patients, oral antihistamines can be added.
- In very severe cases, oral dapsone, 1 to 2 mg/kg per day, can be added. However, given the side effects associated with oral dapsone in infants, the risk-benefit ratio needs to be carefully considered.
- The patient's parent(s) need to understand that none of these therapies alters the course of the disease.

Clinical Course

This is usually a chronic disorder, with children continuing to get new crops of lesions up to the age of 3 years, although the succeeding attacks tend to diminish in intensity.

Fig. 12.7. Numerous small pustules and cloudy vesicles on the foot of a child. The lesions are in various stages of development, with some lesions demonstrating resolution and scale. (From the William Weston Collection, Aurora, CO.)

Fig. 12.8. Close-up of typical small pustules and cloudy vesicles on the toe of a young child.

Fig. 12.9. Numerous pustules and cloudy vesicles on the hand of a young child. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Pustular Arthropod Reactions ICD10 code T14.8 (multiple sites)

Pathogenesis

Pustular arthropod reactions are usually the result of fire ant envenomation, flea bites, and, less commonly, other arthropod reactions. The imported fire ant, *Solenopsis invicta*, is the most commonly implicated species, although at least two other species can also produce pustular reactions. Fire ants have an expanding but limited range that primarily includes the southeastern United States and southwestern United States (Fig. 12.10). Fire ants use their jaws to clamp onto the skin and then pivot, with the stinging apparatus located at the end of the abdomen.

Clinical Features

- Fire ant stings produce an immediate burning sensation, which may last for several minutes.
- The initial reaction is erythema, with a variable wheal-and-flare reaction.
- Lesions are often clustered or circular and can be numerous.
- Over a period of hours to days, the erythema is frequently surmounted by solitary vesiculopustules or pustules (Fig. 12.11).
- Rare patients with fire ant stings experience anaphylaxis.
- Flea bites usually present as one or more pruritic pustules on the lower extremity.
- Scabies may rarely be pustular in children (Fig. 12.12).

Diagnosis

- Fire ant stings are usually diagnostic, because most patients can report a history of fire ant stings.
- In some cases, the lesions may occur in young children who have been outdoors, and the history is not diagnostic. In these cases, the characteristic clustering of the lesions in an endemic area is considered to be supportive of the diagnosis.
- Biopsies are not helpful.

Treatment

- No treatment is an option because the disease is self-limited.
- Ice compresses may provide immediate relief.
- Topical corticosteroids (potent or ultrapotent) can reduce erythema and decrease pruritus.
- Eradication of colonies is often difficult, but a variety of pesticides are useful. A dermatologist with expertise in this area has recommended Amdro fire ant bait as being the most effective.

Fig. 12.10. Typical fire ant mound in Georgia. Note that fire ants do not clear the surrounding vegetation like some ant species.

Fig. 12.11. Patient with grouped pustules on an erythematous base that are the result of fire ant stings.

Fig. 12.12. Hand of a patient with pustular scabies. Note the linear burrow leading into the pustule. Pustular scabies does occur but is an uncommon clinical presentation.

Cutaneous Vaccinia Infections ICD10 code T88.1

Pathogenesis

Cutaneous vaccinia infections are the result of vaccination, which uses a live virus derived from vaccinia, a pox-type virus that is closely related to the smallpox virus. Although routine vaccination has been abandoned, it is still practiced in the military and, to a lesser degree, in civilian and public health care workers. In 2003, about 500,000 individuals were vaccinated in the United States. In more recent years, the use of vaccination has been more selective; however, the number of individuals being vaccinated has not been reported. Although most cases occur because of vaccination, in some cases the virus can be transmitted from vaccinated individuals by direct close contact with other individuals (e.g., between spouses).

Did You Know?
Because of the threat of bioterrorism the United States, the federal government maintains a large enough stockpile of vaccinia to vaccinate everyone in the United States!

Clinical Features

- The vaccination site itself will eventuate into one or more pustules at the site of the introduction of the vaccine (Fig. 12.13). The site usually becomes erythematous within the first 4 days and then rapidly develops a cloudy vesicle, which becomes pustular. Because the vaccination is done with a two-pronged needle that breaks the skin several times, one or more pustules maybe present.
- An autoinoculation vaccination reaction is a second pattern that is perhaps the most common cutaneous complication. It is caused by the patient's touching the vaccination site and spreading it to other sites of her or his body (Figs. 12.14 and 12.15). This reaction pattern usually occurs around thin skin, such as the eye, nose, and genitalia.
- Localized vaccinia infection can spread to others by direct contact. This usually involves a spouse, child, or sexual partner.
- Progressive vaccinia (vaccinia necrosum), as the name implies, consists of progressive localized extension of the vaccinia that does not heal spontaneously. This is most common in immunocompromised individuals.
- Eczema vaccinatum usually occurs in patients with active or quiescent atopic dermatitis. It occurs in about 1 in every 26,000 primary vaccinations.

Diagnosis

- In most cases, the history of a recent smallpox vaccination, associated with one of the patterns described, is sufficient to establish a presumptive diagnosis.
- Rare cases may require a biopsy that, although not diagnostic, will be supportive of the diagnosis.

Treatment

- A semipermeable polyurethane membrane (e.g., Opsite) placed on top of a small gauze pad blocks shedding of the virus at the vaccination site and may reduce autoinoculation and spread to close contacts.
- The Centers for Disease Control and Prevention (CDC) has recommended 0.6 mL/kg of intramuscular vaccinia immune globulin (VIG), divided into multiple doses over several days for severe cases.
- Cidofovir demonstrates in vitro activity against variola and vaccinia and, in theory, could be useful, although there have been no clinical studies to support its routine use.

Clinical Course

Mild autoinoculation infections and localized vaccinia infections are self-limited and will heal without therapy. Patients who are immunocompromised or have eczema vaccinatum have about a 1% to 6% risk of a fatal outcome. All patients presenting with one of these two patterns should be hospitalized for treatment and observation.

Fig. 12.13. Patient with exuberant erythematous vaccination reaction surrounding several small pustules. Remember that this is an active infection.

Fig. 12.14. Autoinoculation of vaccinia from a vaccination site to the thumb. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 12.15. Extensive autoinoculation of vaccinia virus into the groin area of a young soldier presenting as numerous small annular pustules. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 13
Abscesses

Key Terms

Community-Acquired Methicillin-Resistant *Staphylococcus aureus*
Carbuncle
Furuncle
Dissecting Cellulitis of the Scalp
Hoffman disease
Perifolliculitis capitis abscedens et suffodiens

Select Abscesses

- Carbuncle
- Dissecting cellulitis of the scalp
- Furuncle
- Hidradenitis suppurativa
- Kerion
- Mycobacterial furunculosis
- Ruptured epidermoid cyst
- Tungiasis

An abscess results from a neutrophilic host response to something perceived by the immune system to be foreign. As such, abscesses may result from endogenous material, such as keratin from a ruptured follicle or cyst, exogenous foreign material (e.g., injected drugs, suture material), or infectious organisms (e.g., bacteria, fungus, protozoa).

IMPORTANT HISTORY QUESTIONS

How long has the abscess(es) been present?

An abscess may result from an acute event (e.g., ruptured epidermoid cyst), whereas other abscesses may be recurrent (e.g., recurrent furunculosis), or even chronic in nature (e.g., hidradenitis suppurativa).

Do you have any underlying medical conditions?

Immunocompromised patients (e.g., those with HIV infection) are more likely to develop abscesses due to infections. Other conditions, such as end-stage renal disease, and visitation to dialysis centers are associated with methicillin-resistant *Staphylococcus aureus* (MRSA).

Have you recently traveled outside of the country?

This question is a hunt for so-called zebras that might be causing the abscesses (e.g., tropical parasites—myiasis, tungiasis) but also a quick survey for risk factors associated with more germane processes. For example, simply being a traveler, or even being in contact with travelers, is a risk factor for MRSA.

Are you currently taking antibiotics?

In a patient taking an antibiotic, when the condition has not responded or is progressive, there should be prompt consideration of culture and susceptibility studies, a switch in antibiotics, or even reassessment about whether the process was truly infectious in the first place.

Does anyone else in the family have similar lesions?

An affirmative response could indicate an infectious cause—multiple family members with methicillin-sensitive *S. aureus* (MSSA) or MRSA—or could suggest a common exposure among family members (e.g., myiasis, tungiasis).

IMPORTANT PHYSICAL FINDINGS

Is the abscess solitary or multiple?

This is an important physical finding because some conditions are more likely to yield singular abscesses (e.g., ruptured epidermoid cyst), whereas other conditions are more likely to yield multiple abscesses (e.g., hidradenitis suppurativa, recurrent furunculosis).

What is the distribution of the abscesses?

Some abscesses have characteristic distributions. For example, hidradenitis suppurativa occurs in the axillary and groin folds, and dissecting cellulitis occurs on the scalp. Moreover, some infectious processes occur in characteristic locations. Gram-negative bacterial abscesses are more likely to occur in the anogenital region, whereas organisms introduced from the environment (e.g., tungiasis, deep fungal infections) are more likely to occur at acral sites because traumatic inoculation is usually the source of the infection.

Does the abscess demonstrate significant associated erythema or edema?

The presence of erythema, particularly with edema, could indicate an inflammatory host response to the inciting agent but also raises concern for secondary cellulitis, which may affect treatment.

Is the patient febrile?

The presence of fever may implicate an infection. Furthermore, a significant or marked fever could alter management, necessitate use of empiric antibiotics, or even require admitting the patient to the hospital.

Furuncle ICD10 code L02.1 to L02.9 (site-dependent)

Community-Acquired Methicillin-Resistant *Staphylococcus aureus*

Community-acquired MRSA (CA-MRSA) may present with abscesses, abscesses with cellulitis, or as cellulitis alone. Management of CA-MRSA infections is not standardized, but a reasonable approach is as follows.

Healthy Patient With Abscess, With or Without Cellulitis

- Carry out incision and drainage.
- Culture for organism and sensitivity.
- Institute empiric antibiotic therapy (e.g., cephalexin, cefdinir, dicloxacillin, amoxicillin-clavulanate).
- Change to appropriate drug based on culture and sensitivity results.

Unhealthy Patient, High Index of Suspicion for CA-MRSA, and Abscess With or Without Cellulitis, or High-Endemicity Area

- Carry out incision and drainage.
- Culture for organism and sensitivity.
- Institute empiric antibiotic therapy with trimethoprim-sulfamethoxazole ± rifampin, minocycline-doxycycline ± rifampin, or clindamycin ± rifampin.
- Change to appropriate drug based on culture and sensitivity results.

Severe Infection With High Index of Suspicion for CA-MRSA

- Carry out incision and drainage.
- Culture for organism and sensitivity.
- Treat initially with intravenous vancomycin.
- Change to appropriate drug based on culture and sensitivity results.

Pathogenesis

Furuncles (boils) represent a follicle-situated infection caused by lipase-producing strains of *S. aureus* that break down lipids derived from the sebaceous glands. Strains of CA-MRSA are increasingly prevalent, and CA-MRSA is more likely to present as a furuncle with surrounding cellulitis. Less often, furunculosis is caused by other bacteria, such as streptococci and gram-negative organisms.

Clinical Features

- Furunculosis may occur at any age.
- Lesions may be solitary or multiple.
- Furunculosis may occur on any hair-bearing surface.
- The primary lesion is a painful, follicle-based nodule (Fig. 13.1) that becomes a red fluctuant abscess (Fig. 13.2) that drains purulent material spontaneously or with incision and drainage (Fig. 13.3).
- Some cases demonstrate surrounding erythema and induration indicative of associated cellulitis (Fig. 13.4).
- A **carbuncle** is simply a larger lesion that is caused by the confluence of adjacent infected follicles.

Diagnosis

- A presumptive diagnosis is made based on clinical findings, as supported by results of a Gram stain.
- The diagnosis is more fully established based on the results of culture and sensitivity studies of purulent debris and/or the anterior nasal vestibule.

Treatment

- Incision and drainage of singular abscesses is most often adequate therapy, even for CA-MRSA strains.
- Initial antibiotic therapy is based on the clinical situation (see box) but often includes cephalexin, dicloxacillin, and/or amoxicillin-clavulanate.

Clinical Course

Most cases of furunculosis are self-limited and will resolve, perhaps with some scarring or dyspigmentation. About 10% to 20% of patients will develop recurrent furunculosis.

Fig. 13.1. Patient with an early furuncle presenting as a tender erythematous nodule that is not yet fluctuant. (From the William Weston Collection, Aurora, CO.)

Fig. 13.2. Patient with a developed fluctuant furuncle that has started to point as a pustule on the central hair follicle.

Fig. 13.3. Patient with an older furuncle that has spontaneously ruptured, demonstrating yellowish pus.

Fig. 13.4. Patient with a large furuncle of the nipple, with marked erythema, raising the possibility of CA-MRSA or cellulitis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Mycobacterial Furunculosis ICD10 code A31.1

Pathogenesis

Atypical mycobacteria (AMB), including *Mycobacterium marinum*, *Mycobacterium fortuitum*, and *Mycobacterium chelonae* (Fig. 13.5) can produce boil-like lesions in the skin. These AMB are ubiquitous in nature and are often found in soil, water, and decaying organic matter. AMB can be acquired through accidental breaks in the skin, surgical procedures, and even via pedicures or water baths. Although AMB infections may present initially as one or more follicle-based lesions, the condition may progress to a sporotrichoid pattern (see Chapter 18). Many AMB species common to dermatology are so-called rapid-growing species.

Clinical Features

- AMB infections often involve acral skin but can occur anywhere on the skin.
- Early lesions present as one or more red, indurated, usually tender nodules.
- Lesions enlarge and become suppurative, often with the discharge of yellow-white pus (Figs. 13.6 to 13.8).
- Secondary changes are variable but include scale, purulent crusting, and/or ulceration.
- Some patients develop lymphocutaneous (sporotrichoid) spread or satellite abscesses (Fig. 13.9).

Diagnosis

- The clinical features of AMB infections are not singularly diagnostic. It is not uncommon for AMB infections to be managed first as staphylococcal furuncles or foreign body granulomas. It is a failed response to initial management that often triggers consideration—and correct diagnosis—of AMB infection.
- The history of a woman with one or more abscesses of the lower extremity, unresponsive to standard management, and with a history of pedicures at salons, should trigger suspicion of AMB furunculosis.
- The diagnosis is further established by a punch (at least 4 mm) or incisional biopsy that is bisected and submitted for culture (e.g., bacteria, acid-fast bacillus [AFB], fungus) and histologic examination.
- Organisms can be visualized using special AFB stains, but speciation is not possible without culture.

Treatment

- Treatment of cutaneous mycobacterial infections is not standardized. If mycobacterial organisms were detected only by special stains, oral minocycline (100 mg PO bid) is a reasonable empiric therapy while awaiting the results of culture and sensitivity testing that will further refine therapy.
- Once sensitivity is known, drugs often used in addition to minocycline include rifampin, clarithromycin, azithromycin, ciprofloxacin, and cotrimoxazole. Treatment is often continued for 2 to 4 months, and occasional unresponsive cases may require multidrug therapy.
- Physiotherapy (the purposeful warming of an area above 37°C [98.6°F]) may be used as an adjunctive intervention for some species (e.g., *M. marinum*) that are particularly temperature-sensitive.

Clinical Course

Most cases of AMB infection resolve spontaneously without therapy over 2 to 6 months, whereas treated cases respond more quickly. Rare cases, particularly in those who are immunocompromised, may result in dissemination.

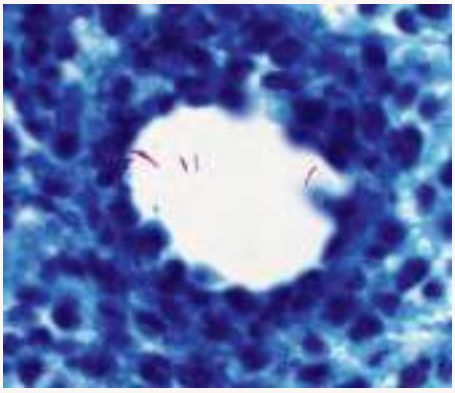

Fig. 13.5. Ziehl-Neelsen stain demonstrating *M. chelonae* from the patient depicted in Fig. 13.7 (1000×).

Fig. 13.6. *Mycobacterium marinum.* This abscess over the knuckle was initially thought to be a foreign body granuloma and was initially treated with intralesional triamcinolone.

Fig. 13.7. *Mycobacterium chelonae*. This solitary abscess developed at the site of a tick bite. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 13.8. *Mycobacterium chelonae*. There is a large abscess on the medial foot that spontaneously ruptured. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 13.9. *Mycobacterium chelonae*. This erythematous plaque on the knee was studded with multiple small abscesses and superficial ulcers. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Hidradenitis Suppurativa ICD10 code L73.2

Pathogenesis

Hidradenitis suppurativa (HA) is a chronic disease that involves abscesses and draining sinuses of the axillae and inguinal folds. Careful studies have demonstrated that the first causative step in HA is follicular hyperkeratosis, which occludes the apocrine glands that empty into the hair follicle. This explains why HA appears in other disorders of follicular occlusion, such as severe acne, dissecting cellulitis of the scalp, and pilonidal cyst. Although bacteria are found in some abscesses of HA, and this exaggerates the host response, studies have suggested that these are secondary events.

Clinical Features

- HA typically begins in adolescents or young adults but, due to chronicity of the disease, is frequently seen in older patients as well.
- Women may demonstrate premenstrual flaring.
- The distribution includes apocrine-rich areas such as the axillae (Fig. 13.10), inguinal folds, and inframammary and perianal regions, although isolated lesions may extend away from the apocrine areas.
- Early lesions resemble a folliculitis that may be transient, with some lesions progressing into erythematous tender abscesses (Fig. 13.11).
- Abscesses may point and rupture, gradually resolve, or produce sinus tracts and scarring (Fig. 13.12).
- Patients with HA typically have multiple attacks, ultimately resulting in confluent plaques of abscesses, sinus tracts, and cicatrix.

Diagnosis

- The clinical presentation of a postpubertal individual presenting with recurrent abscesses in apocrine-rich areas, such as the axilla and inguinal folds, is strongly suggestive of the diagnosis.
- If the process is confined to the perianal region, the differential diagnosis should be expanded to include lymphogranuloma venereum, cutaneous amebiasis, and localized extension of Crohn disease.

Treatment

- Early disease (isolated abscesses without sinus tracts or scarring)
  - Intralesional triamcinolone (2.5–5 mg/mL)
  - Topical clindamycin solution bid for 3 months
  - Oral tetracycline or minocycline
  - Consideration of oral isotretinoin because this is the stage at which it is most likely to be effective
  - Women with premenstrual flares—antiandrogen therapy with spironolactone or cyproterone acetate occasionally useful
- Established disease (abscesses, sinus tracts, and scarring)
  - Surgical extirpation or surgical unroofing of areas of sinus tracts and scarring is the treatment of choice.
  - Adalimumab, a TNF-alpha inhibitor, has now been approved specifically for treatment of HA.
  - If either of these two is not an option, consider oral isotretinoin, although the results are generally not as effective in advanced disease.
  - If these are not options, treat with the same modalities as for early disease, realizing that at best there will be only some improvement.

Clinical Course

HA is usually a chronic, unrelenting, progressive disease that typically causes scar tissue to be formed.

Fig. 13.10. Patient with hidradenitis suppurativa of the axilla presenting as indurated red abscesses with a large sinus tract.

Fig. 13.11. Patient with hidradenitis suppurativa of the groin presenting as a ruptured suppurative abscess that is exuding yellowish pus.

Fig. 13.12. Patient with end-stage hidradenitis suppurativa of the left inguinal fold with abscesses, sinus tracts, and scar formation. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Dissecting Cellulitis of the Scalp ICD10 code L66.3

Pathogenesis

The pathogenesis of dissecting cellulitis of the scalp (DCS), also known as **Hoffman disease** or **perifolliculitis capitis abscedens et suffodiens**, is poorly understood. However, it seems that the initial precipitating event is occlusive hyperkeratosis of the hair follicle. This hypothesis is supported by a strong association with other disorders of follicular keratinization, including hidradenitis suppurativa and severe acne. These diseases are often referred to collectively as the follicular occlusion triad or, if pilonidal cysts are included, the follicular occlusion tetrad.

Clinical Features

- DCS occurs in postpubertal persons, usually adolescents or young men.
- Black men are more often affected, but it can occur in any racial or ethnic group. It is rare in women.
- Other occlusive follicular disorders, such as severe acne (Fig. 13.13A), HA, and pilonidal cyst, may be present in the patient or in family members.
- The vertex and posterior scalp are most often affected, but any area of the scalp may be involved (see Fig. 13.13B).
- Early lesions begin as follicularly situated pustules, but, over time, more deeply situated abscesses form.
- The number of lesions is variable, but, as the disease progresses, sinus tracts form to drain and connect the abscesses (Fig. 13.14).
- Alopecia develops over time. In early lesions, the hairs above the abscesses are easily removed; in later lesions, scarring with permanent hair loss ensues (Fig. 13.15).

Diagnosis

- The clinical presentation of a young man with one or more deep abscesses on his scalp, and with scarring and resultant hair loss, is suspicious for DCS.
- Bacterial and fungal culture (to exclude tinea capitis/kerion) of pus should be carefully considered.
- A 4- to 6-mm punch biopsy or incisional biopsy is useful to confirm the diagnosis. In most cases, the findings will be diagnostic of or consistent with DCS. Special stains may also be used to exclude fungal infection.

Treatment

- Intralesional triamcinolone acetonide (5–10 mg/mL) injection into the abscesses provides rapid diminution of the host response, with reduction of pain.
- Tetracycline antibiotics are useful in reducing the microflora in the hair follicles and directly inhibit neutrophil migration. The senior author (JEF) has had the most anecdotal success with minocycline.
- Oral isotretinoin, dosed in the same fashion as for acne, is effective when used early in the course of the disease but is less effective once extensive scarring and sinus tract formation have occurred. For those who do respond, multiple courses of an oral retinoid therapy are often needed.
- Tumor necrosis factor-α inhibitors have been used, with anecdotal success.
- For patients with severe and/or intractable disease, therapeutic options include surgical drainage of individual abscesses (with only a temporary respite), surgical removal of scar and sinus tracts (requires general surgery in most cases), and radiation therapy at an epilating dose.

Clinical Course

DCS is typically a chronic, unrelenting progressive disease that usually results in scar tissue and permanent alopecia.

Fig. 13.13 A, Patient with severe dissecting cellulitis of the scalp associated with acne conglobata. B, Close-up demonstrating alopecia, abscesses, and sinus tracts. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 13.14. Patient with dissecting cellulitis of the scalp with alopecia, abscesses, scars, and an unusually large sinus tract at the top.

Fig. 13.15. Patient with residual scar and alopecia from dissecting cellulitis treated with oral isotretinoin. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Ruptured Epidermoid Cyst ICD10 code L72.0

Pathogenesis

Epidermoid cysts (also known as epidermal inclusion cysts or sebaceous cysts) are common benign neoplasms that arise from the upper third of the hair follicle. Epidermoid cysts demonstrate a thin epithelial lining, similar to the normal epidermis, which ruptures easily. Moreover, rupture of the cyst, with release of keratin into the dermis, produces a foreign body reaction, with vigorous inflammation. Because of their ubiquity, epidermoid cysts are easily the most common cause of a cutaneous abscess.

Clinical Features

- Often, there is history of a long-standing cyst that rapidly enlarges and becomes painful.
- Epidermoid cysts can occur in areas of previous nodulocystic acne.
- Epidermoid cysts are most common on the head and neck, followed by the trunk.
- The primary lesion is a tender cystic structure, often inflamed or suppurative (Fig. 13.16A), perhaps with surface changes, such as erosion, ulceration, hemorrhage, or discharge of pus.
- An inflamed cyst usually contains an admixture of pus and foul-smelling keratin. Less often, hemorrhage may be present, especially if the patient has manipulated the cyst (see Fig. 13.16B).

Diagnosis

- The clinical presentation of a long-standing cyst that suddenly changes color and/or becomes spontaneously painful is usually sufficient for diagnosis.
- In problematic cases, the most fluctuant portion of the lesion can be incised with a no. 11 scalpel blade; the discharge of white, foul-smelling, keratinous debris establishes the diagnosis.

Treatment

- If the cyst is not suppurative, and hence is not yet ready to be drained, initial therapy may be 2.5 to 5.0 mg of intralesional triamcinolone simply to reduce inflammation. In general, it is safer to use a lower dose of steroids on the face to avoid atrophy. In some cases, this will be adequate therapy.
- Lesions that are clearly suppurative are best managed with incision using a no. 11 scalpel blade, followed by gentle compression to remove as much pus and keratin as possible.
- Although there is a compulsion to treat with oral antibiotics, there has been no evidence to support their use for standard dermal abscesses, smaller than 5 cm, without complex loculations.

Clinical Course

Some ruptured epidermoid cysts have such an intense foreign body reaction that the epithelial wall is destroyed, and no additional therapy is required. Other cysts will persist, in whole or in part, and can be excised after the inflammation has subsided. Surgical removal of cysts that have scarred down is more difficult than the surgical removal of epidermoid cysts that have never been inflamed.

Fig. 13.16 A, B, Typical suppurative ruptured epidermoid cyst of the right cheek of a patient who reported that a small cyst had suddenly enlarged and became painful. The lesion was incised with a no. 11 scalpel blade, revealing contents consisting of an admixture of pus, keratin, and blood. After drainage of the contents, the patient was treated with intralesional triamcinolone, 2.5 mg/mL. The cyst wall was destroyed by the inflammatory host response, and surgical removal was not required. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Kerion ICD10 code B35.0

Pathogenesis

A kerion is a subtype of tinea capitis in which the dermatophyte causes significant inflammation and abscess formation on the scalp. Just like other forms of tinea capitis, most kerions occur in prepubertal children, with peak incidence between 2 and 9 years of age. Most kerions are caused by *Trichophyton* spp., with some cases being caused by *Microsporum* spp. Kerions are often confused with bacterial infections.

Clinical Rule
An abscess and/or pyoderma of the scalp of a prepubertal child is a kerion until proven otherwise!

Clinical Features

- Most kerions affect children between 2 and 9 years of age.
- Kerions can be solitary or multiple.
- Kerions present on the scalp as abscesses with vigorous inflammation and erythema and may be associated with pustular folliculitis, scale, erosions, and/or yellowish scale or crust (Figs. 13.17–13.20).
- Regional lymphadenopathy is often present in the posterior cervical triangle or posterior auricular region.
- Severe cases may be associated with high fevers and malaise.
- Rare cases may cause an id reaction (autoeczematization) of the head and neck area.

Diagnosis

- The clinical presentation of a prepubertal child with one or more deep abscesses on the scalp, with hair loss, is concerning for a kerion. All too frequently, a kerion may be confused with a bacterial abscess and treated with oral antibiotics or, worse, with incision and drainage.
- Broken hairs can be plucked and examined with potassium hydroxide (KOH) for hyphae and spores on or within hair shafts.
- Broken hairs can be plucked and cultured for fungus, or the pus may be cultured for bacteria, but it must be remembered that superinfection with *S. aureus* is not uncommon.
- A 4-mm or larger punch biopsy or incisional biopsy is useful to confirm the diagnosis. In some cases, the histologic findings will be diagnostic (the organisms can be visualized), whereas in other cases, the findings will merely suggest a possible kerion. The biopsy should be bisected, with half sent for fungal culture.

Treatment

- Griseofulvin (microsized, 20–25 mg/kg per day; ultramicrosized, 15 mg/kg per day) for 6 to 8 weeks is the treatment regimen used most often in children; it is widely available as a pediatric suspension.
- Alternatives include terbinafine (3–6 mg/kg per day) for 2 to 4 weeks, itraconazole (3–5 mg/kg per day) for 4 to 6 weeks, or fluconazole (3–6 mg/kg per day) for 6 weeks.
- It has been suggested that terbinafine may be more effective (but more costly) against *Trichophyton* species, while griseofulvin may be more effective against *Microsporum* spp. but at present either may be effectively used in most clinical circumstances.

Clinical Course

In patients with a kerion, about 50% will recover normal hair density on resolution. About 25% will demonstrate focal hair loss that is cosmetically acceptable, and about 25% will demonstrate a cosmetically significant degree of permanent hair loss due to the inflammation.

Fig. 13.17. Kerion. This 2-month-old infant had alopecia, pustules, scales, and crusts and multiple small abscesses. (From the Joanna Burch Collection, Aurora, CO.)

Fig. 13.18. Patient with kerion presenting on the vertex of the scalp as a solitary boggy abscess with alopecia. Also note the associated scale. (From the William Weston Collection, Aurora, CO.)

Fig. 13.19. Patient with kerion presenting as a large abscess with alopecia, with marked overlying postulation and crust.

Fig. 13.20. Patient with kerion that was mistakenly thought to be a bacterial abscess and was treated with incision and drainage. (From the William Weston Collection, Aurora, CO.)

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Chapter 14
Necrotic and Ulcerative Skin Disorders

Key Terms
Red, white, and blue sign
Chancre
Eschar
Pyoderma

Necrotic and ulcerative disorders encompass a wide variety of disease, ranging from infections to autoimmune to vascular conditions. There are many diseases that can present with ulcers, but this chapter discusses only those conditions that present principally, or exclusively, as necrotic lesions or ulcerations.

Necrotic and Ulcerative Lesions: Differential Diagnosis

- Anthrax
- Arterial ulcers
- Calciphylaxis
- Factitial ulcers
- Livedoid vasculopathy
- Necrotic arachnidism (spider bite)
- Necrotizing fasciitis
- Pyoderma gangrenosum
- Stasis ulcers

Sexually Transmitted Ulcers

- Chancroid
- Granuloma inguinale
- Herpes progenitalis
- Primary syphilis

IMPORTANT HISTORY QUESTIONS

How long has the condition been present?

Infections, whether localized (e.g., chancroid, necrotizing fasciitis) or systemic (e.g., ecthyma gangrenosum), necrotic arachnidism (spider bites) tend to have an abrupt onset, whereas some disorders, such as vascular disorders (e.g., stasis ulcers), tend to have a gradual onset.

Do you have any underlying systemic disorders?

Always investigate any predisposing condition. For example, inflammatory bowel disease, rheumatoid arthritis, and lymphoproliferative conditions may be associated with pyoderma gangrenosum. Diabetes mellitus may predispose someone to necrotizing fasciitis, whereas renal disease is a predisposition for calciphylaxis. The use of chemotherapy may predispose an individual to ecthyma gangrenosum.

Is there any history of a clotting disorder?

Some ulcerative conditions are associated with clotting disorders (e.g., stasis ulcers), whereas others are associated with livedoid vasculopathy.

When was your last sexual contact, and did you use a barrier device?

This question is usually reserved for someone with genital ulcers, but it is important in that setting.

Have you had exposure to animals?

This is important in rare cases of anthrax, in addition to milker's nodules (cows) and orf (sheep).

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the lesions?

Some ulcerating conditions involve certain areas. For example, sexually transmitted diseases usually affect the genitalia, whereas vascular disorders usually affect the lower extremities. Many infectious causes of ulcers, such as orf or milker's nodules, involve the hands.

How many lesions are present?

Some ulcers are solitary (e.g., syphilis, necrotizing fasciitis, brown recluse spider bite), whereas other ulcers are multiple (e.g., chancroid, pyoderma gangrenosum, ecthyma gangrenosum).

What is the shape of the ulcer?

Some ulcers are round or oval, with a clean base and sharp circumscription (e.g., syphilis chancre), whereas others often demonstrate ragged edges (e.g., chancroid).

How deep does the ulceration extend?

Some ulcers are superficial (e.g., syphilis, herpes progenitalis), whereas others extend into muscle, tendon, or even bone (e.g., pyoderma gangrenosum, calciphylaxis).

What does the base of the ulcer look like?

The base of some ulcers often resembles granulation tissue (e.g., granuloma inguinale), whereas others are usually quite purulent (e.g., chancroid, pyoderma gangrenosum).

Are the peripheral pulses normal and equal in patients with lower extremity ulcers?

Circulatory abnormalities are important to document when considering arterial insufficiency.

Necrotizing Fasciitis ICD10 code M72.6

Pathogenesis

Necrotizing fasciitis is a life-threatening infection of the skin that involves the deep subcutis and superficial investing fascia. Fournier gangrene represents necrotizing fasciitis of the genitalia and perineum. The current trend is to refer to these conditions, in general, as necrotizing soft tissue infections (NSTIs). Although laypersons may refer to the condition as "flesh-eating Strep," and some cases are due to *Streptococcal* spp. and/or a single organism, most cases are polymicrobial in nature. Cases of necrotizing fasciitis have been attributed to a number of organisms, including *Streptococcus pyogenes, Staphylococcus aureus, Bacteroides fragilis,* and *Clostridium, Haemophilus, Vibrio,* and *Prevotella* spp. Other rare bacteria and even fungi may be involved in some cases of necrotizing fasciitis.

Clinical Features

- NSTIs occurs in adults and children, with both genders equally affected.
- Patients may be otherwise healthy, but risk factors for NSTIs include diabetes mellitus (≈50% of cases), obesity, alcoholism, intravenous (IV) drug abuse, and recent history of prior surgery.
- Patients with NSTIs may report a history of trauma (or surgery) at that site, or they may have another infection that serves as the source of the bacteria (e.g., odontogenic abscess, remote skin abscesses).
- The primary lesion begins as a painful area that looks much like routine cellulitis (Figs. 14.1 to 14.3). The most common sites are the extremities, followed by the trunk and perineum. The pain is often described as being out of proportion to the clinical findings.
- More developed lesions may manifest with dusky skin hues, hemorrhagic blisters, hemorrhagic necrosis, and ulceration. Crepitus or focal abscess formation may be present with some species.

Diagnosis

- An incision or excision biopsy is preferred that should include a generous amount of subcutaneous fat or soft tissue. A punch biopsy might be useful if done deeply, depending on the clinical circumstances.
  - Half of the specimen should be sent for bacterial (aerobic and anaerobic) and fungal cultures.
  - The other half of the specimen can be used for a touch prep with Gram staining if there are facilities and knowledge available for this technique. Typically, there are numerous bacteria; this will provide an immediate indication of the infectious organism(s) likely present.
  - After doing a touch prep with Gram staining, the rest of the specimen should be submitted for a tradition histopathologic examination and be expedited as much as possible.
- Particularly if there is crepitus, consider soft tissue x-rays to see if a gas-forming organism is present (e.g., *Clostridium*).
- Blood cultures should be performed before initiating antibiotics.
- Minimum laboratory studies should include a complete blood count (CBC), chemistry panel—electrolytes, liver function studies, renal function studies—and urinalysis.

Treatment

- Start IV antibiotics in the emergency room (or in any other setting in which this is possible). Always admit the patient to the hospital because NSTIs are an emergency (flesh-eating bacteria).
- Consult an infectious disease specialist to recommend an empiric antibiotic regimen. If such a consultation is not possible, agents such as ticarcillin-clavulanate, piperacillin-tazobactam, imipenem, or meropenem may be used. IV vancomycin should be added if methicillin-resistant *Staphylococcus aureus* (MRSA) is a concern.
- Immediately call a surgeon because prompt surgical débridement is the treatment of choice. Impress on him or her that this life-threatening situation and time is of the essence.

Clinical Course

In a retrospective study at a major medical center, the mortality rate approached 50% and morbidity was substantial.

Fig. 14.1. Diabetic patient with *Streptococcus*-induced necrotizing fasciitis, with epidermal necrosis and hemorrhage. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.2. Patient with early necrotizing fasciitis with crepitus due to *Bacteroides* species. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.3. Patient with necrotizing fasciitis of genitalia—Fournier gangrene caused by *Escherichia coli*. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Ecthyma Gangrenosum ICD10 code L08.0

Pathogenesis

Ecthyma gangrenosum (EG) is an infection consisting of sepsis and localized skin necrosis, with the latter at one or more sites. Classic forms of the disease involve neutropenic patients, with the most frequently implicated bacteria being *Pseudomonas aeruginosa,* followed by *Serratia*, *Escherichia coli*, *Klebsiella pneumoniae,* and other gram-negative organisms. Some cases of EG are polymicrobial and, in addition to gram-negative bacteria, another gram-positive bacteria may also be involved in the infection.

Pathogenesis

- Patients with EG are usually neutropenic, with the total white blood cell count usually less than 250 cells/mcL.
- Rarely, patients have a normal white blood cell count, but there may be other contributory diseases (e.g., HIV infection, hypogammaglobinemia, lymphoma).
- Signs and symptoms of a systemic infection, including fever, malaise, lassitude, are often present.
- EG usually affects the axillary skin, anogenital skin, and skin of the lower extremities.
- Single or multiple lesions may be present,
- Primary lesions are edematous red macules or patches that rapidly progress to hemorrhagic bullae (Fig. 14.4). Mature lesions demonstrate an eschar (Fig. 14.5) or ulcer (Fig. 14.6), with a rim of erythema.

Diagnosis

- An acute onset of erythematous macules or patches, later with ulceration and hemorrhage, in a patient with neutropenia or another form of immunosuppression, should raise suspicion of EG.
- A CBC to determine neutropenia is always indicated.
- Gram staining of an aspirate or touch prep will demonstrate numerous bacteria (Fig. 14.7) and provide information as to whether this is a gram-positive, gram-negative, or polymicrobial infection.
- A 3- or 4-mm punch biopsy is characteristic, with millions and billions of bacteria typically identified, often with little or no inflammation because the patient is usually neutropenic.
- Culture blood, aspirate, and biopsy material.

Treatment

- Monotherapy is usually with a antipseudomonal antibiotic, such as ceftazidime, imipenem, or cefepime.
- Polytherapy may involve an antipseudomonal aminoglycoside plus an antipseudomonal β-lactamase penicillin (e.g., piperacillin) or ticarcillin-clavulanate potassium.
- If an infected catheter is suspected, there are chemotherapy-induced oral ulcers, known gram-positive species are present, or the patient is already on fluoroquinolone, vancomycin is often added.
- Correction of the neutropenia or another cause of immunosuppression is useful, if possible.

Clinical Course

EG is a serious infection, with mortality rates in the literature of over 30% and as high as 90% in some series.

Fig. 14.4. Patient with early ecthyma gangrenosum showing necrosis and hemorrhage. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.5. Patient with ecthyma gangrenosum, with black eschar and rim of erythema. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.6. Patient with polymicrobial ulcerated ecthyma gangrenosum. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

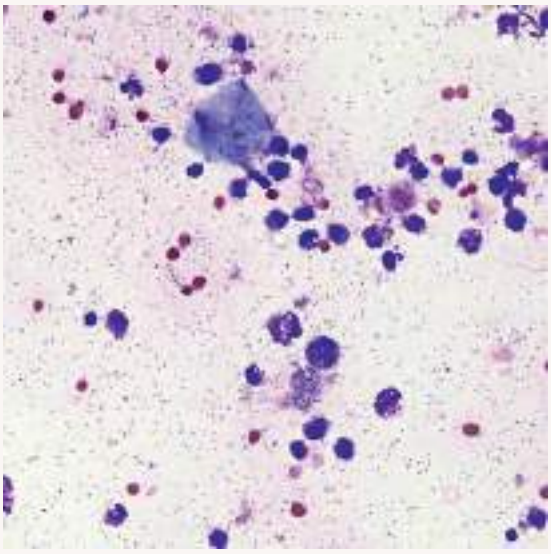

Fig. 14.7. Touch prep from ecthyma gangrenosum showing numerous very short rods of *Serratia marcescens* (Gram stain: 400×).

Pathogenesis

Orf is an uncommon viral infection (*Parapoxvirus,* from the family Poxviridae) of the skin that is usually acquired from direct contact with goats or sheep or with fomites in a farm or ranch environment (e.g., fencing, digging in infected soil). Rarely, the infection may also be acquired from deer, musk ox, camel, or pronghorn antelope. A similar but less common viral infection, called milker's nodule, can be acquired from cattle.

Clinical Features

- Orf is acquired through minute breaks in skin and begins 3 to 7 days after inoculation.
- Orf usually occurs on acral skin, but any site may be involved.
- Orf lesions are usually solitary, but multiple lesions can occur.
- Early orf creates round to oval erythematous lesions, with a maculopapular appearance.
- Fully developed orf consists of round to oval boggy nodules, with a targetoid appearance (Figs. 14.8 to 14.10). The center is typically eroded and red, with a gray or white middle zone, and with peripheral erythema.
- Older lesions of orf may demonstrate a verrucous appearance, and resolving lesions may be crusted.
- Rare patients may demonstrate lymphangitis or regional lymphadenopathy, or even constitutional symptoms, such as fever, malaise, and chills.

Diagnosis

- The presentation of a usually solitary, acral, boggy nodule, perhaps with a targetoid appearance, and in a patient with exposure to farm animals or in an agricultural setting, suggests the diagnosis of orf.
- A history of direct contact with sheep, goats, or other more exotic animals or exposure to agricultural settings should be carefully sought because it is thought that the virus may remain dormant for years in soil, wood, or on fomites in an agricultural setting. If there is a history of exposure to cows, then milker's nodule should be suspected.
- A punch or small excision biopsy is usually fairly diagnostic, although it may be difficult to differentiate from a closely related virus (milker's nodule).
- In rare cases, specimens can be submitted for electron microscopy, which is a more specific test. However, this is expensive and rarely done.
- Viral culture, complement fixation tests, and immunofluorescent tests are available in research laboratories but are not typically done in routine clinical settings.

Treatment

- No treatment is required because this is a self-limited viral infection.
- There have been reports of treatment via excision, but this is not recommended.
- Topical idoxuridine or topical cidofovir may accelerate healing, although the reports are anecdotal, and controlled randomized trials have not been done.

Clinical Course

Orf is a benign, self-limited disorder that heals without treatment over 4 to 6 weeks. Rare cases result in permanent scarring.

Fig. 14.8. Two superficially ulcerated nodules typical of orf. This was acquired from digging in the backyard of the patient's home in Colorado that had been built on the site of an old sheep ranch. It is important to realize that the virus can remain dormant in the soil and on fomites for decades.

Fig. 14.9. Three ulcerated nodules on the left cheek of a young man from Texas. The source of the infection was never identified. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.10. Patient with large linear ulcerated lesion on the dorsum of the hand. The lesion was acquired in Colorado, with no known source. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Necrotic Arachnidism ICD10 code T63.3

Pathogenesis

The true prevalence of spider bites is unknown, but about 10,000 spider bites are reported to poison control centers in the United States each year. *Necrotic arachnidism* is the term used for all necrotic spider bites. *Loxoscelism* is a term reserved for reactions to bites of the brown recluse spider and members of that same genus (Fig. 14.11). Brown recluse spiders are normally found outdoors—under rocks, cliffs, and areas that afford protection—but this spider readily adapts to indoor habitats as well. There are 13 species of *Loxosceles*, with 5 causing cutaneous loxoscelism (*Loxosceles reclusa*, *Loxosceles deserta*, *Loxosceles arizonica*, *Loxosceles laeta*, and *Loxosceles rufescens*). The brown recluse is sometimes called the violin spider because of a violin-shaped marking on the dorsum. Brown recluse venom contains at least nine identified protein fractions; the most important to cutaneous reactions is a substance called sphingomyelinase D2.

Clinical Features

- A brown recluse spider bite is usually painless.
- Within 6 to 12 hours, a small papule develops at the bite site, surrounded by edema (Fig. 14.12).
- Constitutional symptoms are variable and include malaise, headache, arthralgias, fever, nausea, vomiting, and, occasionally, a nonspecific maculopapular eruption.
- In about 90% of cases, the response is limited to a local urticaria-like or cellulitis-like reaction.
- In less than 10% of cases, and within 2 to 3 days, the site begins to demonstrate early signs of hemorrhage (Fig. 14.13) and necrosis (Figs. 14.14 and 14.15), with a central gray to violaceous center, surrounded by a white ring, and then by erythema, the so-called red, white, and blue sign.
- Ulcers caused by the brown recluse spider characteristically heal very slowly.
- Rarely reported complications may include a Coombs-positive hemolytic anemia, disseminated intravascular necrosis, seizures, renal failure, and even death.

Diagnosis

- History of a spider bite and identification of the offending spider is the only definitive test.
- In the absence of a captured spider, the clinical presentation remains the principal means of diagnosis.
- Biopsies are not diagnostic but may reveal findings consistent with a spider bite. A biopsy is not typically performed unless there is desire to exclude other ulcerative conditions.
- In severe cases, serial CBC testing because of possible hemolysis and thrombocytopenia and serial urinalysis to rule out hemoglobinuria may be performed.

Treatment

Mild Cases

- RICE therapy—***r***est, ***i***ce ***c***ompresses for 15 min/hour, and ***e***levation
- Aspirin for pain relief and to reduce thrombosis and a tetanus booster shot (if not up to date)

Severe Cases

- Dapsone use is controversial. Animal studies have produced mixed results. In one uncontrolled human study, patients treated with dapsone required less surgery and had better clinical outcomes. Some studies have indicated that to have any efficacy, dapsone must be initiated in the first 36 hours after the bite.
- The use of systemic corticosteroids is advocated by some authorities, but six animal studies and human studies have failed to demonstrate any definitive benefit on lesion size or progression with corticosteroids.
- Surgical excision has been advocated by some, but others think that it is contraindicated and can actually be detrimental. Most authorities advocate surgery only for late-stage, stabilized lesions.
- Brown recluse specific antivenin exists but must be administered within the first 24 hours.

Fig. 14.11. Brown recluse spider in Arkansas demonstrating the characteristic violin marking on the dorsum.

Fig. 14.12. Patient with typical spider bite from an unknown species. Routine spider bite ulcers are often oval because the venom is injected with two fangs.

Fig. 14.13. Hemorrhagic brown recluse spider bite on day 2. (Courtesy Dr. Paul Gillum.)

Fig. 14.14. Brown recluse spider bite on day 11. (Courtesy Dr. Paul Gillum.)

Fig. 14.15. Brown recluse spider bite with black eschar on day 37. (Courtesy Dr. Paul Gillum.)

Pathogenesis

Calciphylaxis is an uncommon and potentially lethal condition caused by occlusive calcification of blood vessels, with resultant tissue necrosis. The pathogenesis is poorly understood, but, in nearly all cases, there are underlying abnormalities in calcium and/or phosphorus metabolism that are often precipitated by a secondary event, such as trauma. Most patients with calciphylaxis have end-stage renal disease (ESRD) and elevated levels of parathyroid hormone (PTH). A high percentage of these same affected patients also receive vitamin D supplementation. However, less than 5% of all persons with ESRD develop calciphylaxis, indicating that the process is likely complex and multifactorial.

Clinical Features

- The disease is much more prevalent in ESRD but, even among persons with ESRD, calciphylaxis is more common in whites and in women (3:1).
- Lesions of calciphylaxis may be single or multiple.
- Early lesions present as painful indurated or dusky plaques that manifest a reticulated appearance.
- Later lesions may ulcerate or progress to irregular black eschars (Figs. 14.16 and 14.17).

Diagnosis

- A punch or incision or excision biopsy, to include a generous amount of subcutaneous fat, is necessary. Histologic findings include occlusive calcium deposition in lobular blood vessels, with resultant inflammation (Fig. 14.18). This finding, combined with the clinical situation, is diagnostic.
- Soft tissue x-rays may show calcium in the fat or blood vessels, but this is not diagnostic of only calciphylaxis. For example, elderly persons may have nonocclusive calcification of larger blood vessels, specifically without the other stigmata of calciphylaxis (Mönckeberg arteriosclerosis).
- When calciphylaxis is suspected, minimum laboratory studies should include determination of blood calcium (abnormal in about 20%), phosphate, and PTH levels. Renal function tests and urinalysis should also be performed.

Treatment

- Calciphylaxis is a medical emergency, and all patients should be admitted to the hospital.
- Sodium thiosulfate, 25 g IV three times per week, may be helpful through the formation of calcium thiosulfate salts that are 250 to 100,000-fold more soluble than other calcium salts, allowing mobilization of the deposits, with subsequent excretion. Treatment must be continued for months.
- Parathyroidectomy has been advocated by some authors but is controversial because not all patients with calciphylaxis manifest elevations of PTH levels. The rationale is that parathyroidectomy reduces hormone levels and normalizes calcium and phosphate homeostasis. It seems reasonable to consider this approach when there is demonstrable secondary hyperparathyroidism.
- Anecdotal evidence supports the use of cinacalcet, 30 mg PO qd. This drug targets the calcium-sensing receptor of the parathyroid gland and lowers PTH levels.

Prognosis

Historically, calciphylaxis has been associated with high mortality. One- and 5-year survival rates may be as poor as 45% and 35%, respectively. Many patients with calciphylaxis die from sepsis. The impact of newer treatments, such as sodium thiosulfate and cinacalcet, on mortality has not yet been fully appreciated.

Fig. 14.16. Fatal case of calciphylaxis demonstrating eschar, with central necrosis extending into the fat. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.17. Patient with calciphylaxis demonstrating multiple lesions, with dusky appearance of the leg due to anoxia associated with early signs of necrosis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

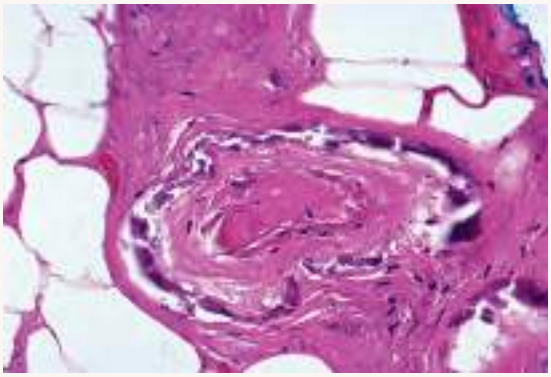

Fig. 14.18. Biopsy of calciphylaxis demonstrating calcium deposition in vessel wall associated with complete obliteration of the vascular lumen. This vascular occlusion accounts for the necrosis seen clinically (H&E;1000×).

Stasis Ulcer ICD10 code 187.2

Pathogenesis

Leg ulcers caused by chronic venous hypertension are due to incompetent valves in the deep venous plexus or incompetent valves in venous perforator vessels that connect the deep and superficial venous plexus. Valve incompetence, in turn, is a complex and multifaceted process, but implicated factors include venous thrombosis, congenital weakness or absence of valves, and injury and aging of valves. Leg ulcers occur most often in the elderly, with some studies showing that about 1% of all patients older than 65 years have at least one leg ulcer.

Clinical Features

- Many patients with leg ulcers have a history of venous thrombosis in the affected extremity.
- Ulcers are more often unilateral but can be bilateral.
- Frequently, there is evidence of venous incompetence, such as distal engorgement of the superficial venous system (Fig. 14.19).
- Edema of an affected extremity is common and, early in the course of disease, may be all that is present.
- Venous ulcers usually present on the medial aspect of the leg, near the malleolus.
- Acute or chronic stasis dermatitis may also be present (Fig. 14.20).
- Scars from previously healed ulcers may also be present (Fig. 14.21).

Diagnosis

- Patch testing should be considered in patients with ulcers that itch or demonstrate significant edema. It has been well recognized that stasis, and hence leg ulcers, predisposes an individual to allergic contact dermatitis. In a study of 235 patients with leg ulcers, 106 underwent patch testing, with 75% demonstrating at least one positive reaction. Most reactions were caused by fragrances, lanolin, colophony, and neomycin.
- Venous ulcers are often ragged, at least in comparison to arterial ulcers, which are more likely to have a punched-out appearance. Arterial ulcers are also more likely to demonstrate an eschar.

Treatment

- Compression hose are a mainstay of therapy because they reduce the chronic venous congestion and hypertension. Hose should be well fitted and with graded compression. Carefully applied elastic bandage (Ace) wraps may also be used.
- Unna boots provide excellent fixed compression and protection and may be used in recalcitrant cases.
- Intermittent pneumatic compression is useful in reducing edema and may also accelerate healing. Many brands are available.
- Mild to moderate topical corticosteroids, applied for 1 to 2 weeks, are useful for the management of the associated dermatitis (and itching), but their use does not otherwise alter the course of disease.
- Pentoxifylline, 400 mg PO tid, is a useful adjunct because it reduces fibrosis, promotes fibrinolysis, and makes erythrocytes more pliable.
- Optimal topical management of ulcers is not standardized, and details are beyond the scope of this chapter. In general, fibrinolytic agents are not useful, and topical antibiotics (e.g., bacitracin, neomycin) should be avoided due to high rates of sensitization in the setting of stasis. Topical petrolatum is a mainstay.
- Split-thickness grafts, pinch grafts, or artificial skin (e.g., Apligraf, Dermagraft) can accelerate healing once a bed of granulation tissue has been achieved.

Clinical Course

Chronic venous hypertension is a chronic condition that requires continuous therapy to prevent ulceration. Patients may be referred to wound centers or wound specialists for longer term care.

Fig. 14.19. Patient with superficial stasis ulceration and erosion near the medial malleolus area, a common site of venous ulcers. Note the dilated vessels distal to the ulceration. This is a common clinical finding that indicates valvular incompetence and supports the presence of chronic venous hypertension.

Fig. 14.20. Severe chronic stasis dermatitis, with superficial ulceration and marked hyperkeratosis.

Fig. 14.21. Patient with partially healed venous ulceration, with associated scar from healed ulcers from a previous episode of ulceration.

Arterial (Ischemic) Ulcer ICD10 code 173.9

Pathogenesis

Arterial ulcers, also known as ischemic ulcers, are caused by insufficient delivery of blood by peripheral arteries. Most often this is due to atherosclerosis, which, in turn, causes partial or complete occlusion of one or more peripheral arteries. Although most cases are due to gradual occlusion of the arteries, in some cases the ulcers are caused by cholesterol emboli. These consist of an atheromatous plaque detached from a proximal source, which occludes a distal vessel. Arterial ulcers are more common in patients with diabetes mellitus, in cigarette smokers, and in the elderly.

Differential Diagnosis of Chronic Leg Ulcers

- Arterial ulcers
- Cholesterol emboli
- Dysproteinemias (e.g., cryoglobulinemia, cold agglutinin disease)
- Hydroxyurea ulcers
- Infectious ulcers
- Livedoid vasculopathy
- Necrobiosis lipoidica
- Neoplastic ulcers
- Neuropathic ulcers
- Pyoderma gangrenosum
- Red blood cell disorders (e.g., sickle cell anemia, thalassemia)
- Stasis (venous) ulcers
- Vasculitis (various types)

Clinical Features

- Arterial ulcers may be unilateral or bilateral.
- Arterial ulcers usually affect the distal leg and are more likely to affect the lateral leg than stasis ulcers.
- Distal pulses may be diminished or absent.
- Chronic arterial insufficiency may lead to hair loss and thinned skin in the affected extremity (Fig. 14.22).
- The toes may be purple-red due to vascular insufficiency (see Fig. 14.22).
- Arterial ulcers tend to be have a more punched-out quality and are deeper than stasis ulcers (Figs. 14.23 and 14.24).
- Arterial ulcers are often painful. The pain may be relieved by keeping the extremity below the level of the heart. Patients may also complain of claudication.

Diagnosis

- The clinical presentation of an ulcer in an older patient with known atherosclerotic disease and/or diabetes mellitus should trigger consideration of an arterial ulcer. This concern is augmented when the ulcer appears punched out, when it lies on the lateral leg, or if there are other findings of peripheral artery disease (e.g., loss of hair, shiny skin appearance, purple-red toes).
- Weak or absent distal pulses is a supportive clinical finding.
- Doppler ultrasonographic studies provide a noninvasive means to assess distal blood flow.
- Routine x-rays are rarely helpful in establishing the diagnosis but may be useful in excluding osteomyelitis in deep ulcers that overlie bone.

Treatment

- Treatment of predisposing factors, such as optimizing diabetes management, smoking cessation, and hypertension treatment and/or hyperlipidemia therapy, may slow progression of the disease.
- In contrast to stasis ulcers, compression should be avoided. Wound care is necessary, and skin grafts or artificial skin (e.g., Apligraf, Dermagraft) are helpful once granulation tissue has been achieved.
- The most important immediate treatment is referral to a vascular surgeon for consideration of bypass grafting, angioplasty (with or without stent placement), and atherectomy.

Clinical Course

Arterial ulcers heal poorly unless blood flow is restored. Some patients may lose part(s) of one or more extremities.

Fig. 14.22. Arterial ulcer of the shin associated with thin, shiny, hairless skin and reddish-purple toes in a patient with diabetes mellitus.

Fig. 14.23. Large, deep, punched-out ulcer in a patient with peripheral artery disease and cholesterol emboli. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.24. Patient with large, deep sharply defined ulcer on the heel due to peripheral atherosclerotic disease. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Pyoderma Gangrenosum ICD10 code L88

Pathogenesis

Pyoderma gangrenosum (PG) is a serious ulcerative skin condition that is often underappreciated, to the detriment of the patient and clinician. Lesions of PG may be easily confused with vascular ulcerations, infections, and spider bites. The pathogenesis of PG is poorly understood. A strong association exists between PG and inflammatory bowel disease, rheumatoid arthritis, and autoimmune hepatitis, suggesting that it is a T cell–mediated autoimmune disorder, although neutrophils represent the effector cells.

Clinical Features

- PG is strongly associated with inflammatory bowel disease (~50% of cases) and rheumatoid arthritis (~10%) of cases. Disease activity in PG may or may not parallel that of the associated condition.
- PG may occur on any cutaneous site, including mucosal surfaces such as the genitalia or conjunctiva. The lower extremities are most often affected.
- Early lesions of PG begin as tender erythematous papules that enlarge to an erythematous nodule but with intact skin. Subsequently, lesions of PG then become pustular or frankly ulcerate (Fig. 14.25).
- Fully evolved PG represents an ulcer that may rapidly and relentlessly enlarge (up to 1–2 cm/day) or may remain stable. Ulcers often demonstrate a marked or even violaceous erythema that extends up to 3 cm away from the ulcer, with a ragged or undermined edge. PG ulcers are of varied depth and may extend into deep underlying structures, including bone and internal organs (Fig. 14.26).
- PG may occur on mucosa (Fig. 14.27) and may develop at sites of trauma (pathergy). Because of this pathergy, the ulcers of PG may expand with surgical débridement, which is contraindicated.
- About one-third of patients with PG have an asymmetric seronegative arthritis.
- Pain is often substantial in PG and may be out of proportion to the physical findings.

Diagnosis

- The clinical presentation, with one or more expanding ulcers and a ragged and undermined border, occurring in a patient with inflammatory bowel disease or rheumatoid arthritis, strongly suggests PG.
- However, PG is a diagnosis of exclusion, and a biopsy for routine histopathologic analysis and tissue culture (for bacterial, fungal, and acid-fast organisms) should be performed from the ulcer's edge.
- Imaging may be useful to exclude osteomyelitis or involvement of deep integument or bone.

Treatment

- Therapy for PG must be individualized, based on the extent of disease and associated conditions.
- Lavage with sterile saline and/or wet compresses may be used to débride necrotic tissue gently. As lesions are brought under control, occlusive hydrocolloid dressing becomes a treatment mainstay.
- Although the literature is conflicted, it is one author's experience (WAH) that collagenase ointment, in some situations, may paradoxically worsen PG, probably because of tissue injury or pathergy mechanisms.
- Early lesions may be aborted, even before ulceration, with intralesional corticosteroids (10–40 mg/mL).
- Once ulcers develop, or if there are extensive lesions, oral prednisone (40–80 mg PO qd) is the initial treatment of choice. Prednisone dosing is tapered based on the clinical response. Reduced pain and lesser erythema are clinical indications of a response. Minocycline may also be added to the regimen.
- Steroid-sparing agents used for PG include cyclosporine (2–4 mg/kg per day), mycophenolate mofetil, tacrolimus, and anti–tumor necrosis factor-α (TNF-α).
- TNF-α agents may be used.

Clinical Course

The clinical course of PG is highly varied. Some patients will have a single episode of PG, whereas other patients will have recurrent episodes that span decades and are often precipitated by minor trauma.

Fig. 14.25. Early pyoderma gangrenosum of the knee, with a rapidly spreading margin, in a young woman. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.26. Patient with established lesion of pyoderma gangrenosum, with exposed tendon. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.27. Patient with ocular pyoderma gangrenosum. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Chancroid ICD10 code A57

Pathogenesis

Chancroid is a sexually transmitted disease caused by the gram-negative bacillus *Haemophilus ducreyi*. It causes painful ulcers, usually on the genitalia, in men and women. The condition is most common in Africa and Asia, but sporadic outbreaks have appeared in the United States.

Clinical Features

- Chancroid has a short incubation period compared to syphilis, ranging from 2 to 5 days in most cases. In some cases, it may take as long as 10 days to develop into visible disease.
- Lesions usually occur on the genitalia, but extragenital sites may be involved. In men, the prepuce, penile shaft, glans penis, coronal sulcus, and frenulum are most often involved; in women, most lesions occur on the labia majora, fourchette, labia minora, and clitoris.
- The earliest lesion is a painful papule or nodule (Fig. 14.28) that rapidly breaks down to produce a tender, ragged or dirty ulcer, without induration, and of variable size (Figs. 14.29 and 14.30).
- So-called kissing ulcers are common due to autoinoculation (see Fig. 14.29).
- Variations include dwarf chancroid (small shallow ulcers), giant chancroid (unusually large ulcers), follicular chancroid (begins as a follicular pustule that ulcerates), transient chancroid (superficial ulcer that heals, followed by lymphadenopathy), serpiginous chancroid (often due to multiple ulcers that coalesce), and mixed chancroid (chancroid plus another sexually transmitted disease).
- Regional lymph nodes are usually enlarged and tender and may be fluctuant (Fig. 14.31). Spontaneous rupture of the enlarged node can occur.
- Some patients may have constitutional symptoms, such as low-grade fever and malaise.

Diagnosis

- Recent suspicious sexual contacts, especially occurring in an endemic area, and/or if it occurred with a sex worker, should prompt consideration of chancroid.
- A tender, ragged, dirty ulcer occurring on the genitalia, with tender regional lymphadenopathy, also suggests chancroid, but the condition can be mimicked by a primary herpes simplex virus (HSV) infection.
- Gram staining of material swabbed from the ulcer edge may demonstrate short, gram-negative bacilli arranged as schools of fish, which further supports the diagnosis.
- Culture of a specimen from the ulcer edge is useful, but it should be submitted to the laboratory with an explicit (written) request to exclude chancroid. The organism is fastidious and requires specific media (e.g., enriched gonococcal agar base, enriched Mueller-Hinton agar) for growth.
- Biopsies can be taken from the ulcer edge, but the pathologist should be forewarned that chancroid is in the differential diagnosis so that the appropriate special stains may be used. The organism cannot be easily recognized on routine H&E examination.

Treatment

- Antibiotic management includes azithromycin (1 g PO, single dose), ceftriaxone (250 mg IM, single dose), erythromycin (500 mg PO tid × 7 days), and ciprofloxacin (500 mg PO bid × 3 days). Before instituting therapy, it would be prudent to refer to the CDC website for the most current treatments and dosages.
- All sexual partners encountered in the 10 days preceding symptom onset must be treated, and affected patients cannot engage in sexual activity until the antibiotic therapy is complete and the ulcers have healed.

Clinical Course

Subjective improvement usually occurs within 3 to 7 days of therapy, and the ulcers heal within 2 weeks. The lymphadenopathy may persist for 3 weeks or longer. Scarring, phimosis, balanoposthitis, ruptured buboes with severe pain, fistula formation, and sexual dysfunction due to scarring are rare complications.

Fig. 14.28. Patient with early chancroid demonstrating painful papulonodular lesion with impending necrosis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.29. Patient with superficial chancroid ulcers with kissing lesions in an uncircumcised man. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.30. Patient with characteristic large, irregular, and tender nonindurated ulcer of chancroid. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.31. Patient with chancroid ulcer, with associated tender suppurative unilateral lymphadenopathy. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Primary Syphilis ICD10 code A51

Pathogenesis

Syphilis is an infection caused by the spirochete *Treponema pallidum*. It is transmitted nearly exclusively by sexual contact. Epidemiologic studies have suggested that about one-third of persons who have sexual intercourse with an infected individual will themselves develop infection. About 20,000 cases of primary and secondary syphilis were reported to the Centers for Disease Control and Prevention (CDC) in 2015, but the true incidence is likely much higher. Syphilis is particularly prevalent in the men who have sex with men (MSM) population, but lately the elderly represent the US subpopulation with the greatest observed increases in syphilis incidence.

Clinical Features

- The incubation period is 10 to 90 days (average, 21 days).
- In men, primary syphilis chancres usually involve the prepuce, coronal sulcus, glans, and frenulum of the penis (Fig. 14.32 and 14.33); in women, the labia, urethra, and cervix are preferentially involved. Common extragenital sites include the oral cavity, anus, and fingers (Fig. 14.34).
- The classic syphilis chancre is a solitary, nontender, indurated (rubbery) ulcer, with a clean base.
- Unusual chancres may be painful, multiple (up to 25%), minimally indurated, or purulent (the latter due to secondary infection). Regional lymphadenopathy (firm, nonsuppurated) is often present.
- Sometimes, the mucocutaneous manifestations of secondary syphilis will occur before the primary chancre resolves (Fig. 14.35).

Diagnosis

- A high index of suspicion is necessary to recognize syphilis. In one study, more than 50% of cases of primary syphilis were missed at the initial medical visit.
- Demonstration of the organism by dark-field microscopy remains the gold standard for diagnosis, with 80% sensitivity, but this technique is not often used and is not widely available.
- Smears from the ulcer base can be examined using the direct fluorescent antibody test for *Treponema pallidum* (DFA-TP). Although the sensitivity of this technique approaches 100%, it is also not widely available.
- Serologic testing remains the most widely available technique in an emergency, urgent, or primary care setting. The rapid plasma reagin (RPR) and venereal disease research laboratory (VDRL) tests are used. In general, if the ulcer has been present for only 1 week, only 25% of cases will test positive, but if the ulcer has been present for 4 weeks, almost 100% of cases will test positive.
- Positive results via the RPR and VDRL assays should be confirmed with a *Treponema*-specific test, such as the fluorescent treponemal antibody absorption (FTA-ABS) test and *Treponema pallidum* particle agglutination (TP-PA) test. These latter tests, once positive, usually remain positive for the life of the patient.

Treatment

- Syphilis is a reportable disease. The appropriate public health authorities must be notified, and all sex partners must be contacted, tested, and treated.
- Benzathine penicillin G (2.4 million units IM, single dose) is the treatment of choice for adults.
- For special cases, such as in children and pregnant, HIV-positive, and penicillin-allergic patients, it is strongly recommended that the current treatment recommendations be obtained from the CDC website (http://www.cdc.gov/std/tg2015/syphilis.htm).

Clinical Course

The chancre of syphilis will heal in 2 to 4 weeks. Untreated primary syphilis may progress to secondary syphilis or, rarely, to tertiary syphilis. Nontreponemal testing modalities (RPR, VDRL) titer to disease activity. A four-fold decrease in titer within 6 to 12 months is usually indicative of treatment success.

Fig. 14.32. Primary genital syphilis chancre. Note the indurated edge. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.33. Patient with resolving primary syphilis. Because the primary lesion resolves, some patients fail to seek medical care. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.34. Patient with extragenital primary syphilis chancre. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 14.35. Primary extragenital syphilis with secondary syphilis. The primary lesion occurred when his partner laid his penis on his shoulder while he slept. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 15
Subcutaneous Diseases

Key Terms

Erythema Induratum
- Nodular vasculitis

Lupus Panniculitis
- Lupus erythematosus panniculitis
- Lupus profundus

Subcutaneous Granuloma Annulare
- Deep granuloma annulare
- Pseudorheumatoid nodules

Rheumatoid Nodules
- Rheumatoid nodulosis syndrome

Subcutaneous diseases include those conditions that are classically considered panniculitis (e.g., erythema nodosum, erythema induratum), in addition to diseases that may involve the subcutaneous fat (e.g., rheumatoid nodules, deep granuloma annulare), and even vasculitis, which may affect the vessels of the subcutaneous fat and resemble a panniculitis. It is important to note that later in the course of the disease, some forms of panniculitis may involve the dermis and/or epidermis, resulting in perforation or ulceration.

IMPORTANT HISTORY QUESTIONS

How long have the lesions been present?

Some forms of panniculitis are usually acute and do not last long (e.g., pancreatic panniculitis), whereas others (e.g., lupus panniculitis) tend to be chronic.

Are the lesions painful, and, if so, how painful are they?

Some types of panniculitis are exquisitely painful (e.g., pancreatic panniculitis), whereas others are only tender (e.g., erythema nodosum) and some are typically not painful (e.g., subcutaneous granuloma annulare).

What medications do you take?

This is a very important question, because some forms of panniculitis can be drug induced (e.g., erythema nodosum, pancreatic panniculitis), which may mean that the condition is potentially curable.

Do you have any other medical conditions?

Tuberculosis is of particular interest; this specifically because it is associated with erythema induratum and erythema nodosum. Determine if there is a known history of hepatitis B infection, which is associated with polyarteritis nodosa; pancreatitis, which could indicate pancreatic fat necrosis; and sarcoidosis, which can present as subcutaneous nodules and plaques. The patient should also be asked about any known history of a connective tissue disorder, such as lupus erythematosus.

Have you ever had a positive tuberculosis skin test?

This is a most important evaluation of the patient with possible erythema induratum and, to a lesser extent, erythema nodosum.

How much alcohol do you consume in a week?

This question obviously needs to be used only when pancreatic fat necrosis is a clinical consideration. It needs to be stated with tact.

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the lesions?

Some types of panniculitis are almost always located on the legs (e.g., erythema nodosum, erythema induratum), whereas others are frequently located in other areas. For example, subcutaneous granuloma annulare is not infrequently found on the head in infants and young children.

Are the lesions ulcerated, or is there any evidence of epidermal change?

Some forms of panniculitis are never ulcerated (e.g., erythema nodosum, subcutaneous fat necrosis of the newborn), whereas others, such as erythema induratum and pancreatic fat necrosis, are frequently ulcerated. Rheumatoid nodules can also demonstrate perforation of necrotic collagen.

Is there any physical evidence of active arthritis?

Rheumatoid nodules and pancreatic fat necrosis can both be associated with arthritis. It is not uncommon for erythema nodosum to be associated with arthralgias.

Are there any other types of skin lesions?

This is important, because some diseases, such as subcutaneous granuloma annulare (e.g., annular lesions) or sarcoidosis, may have different types of lesions present on the body, which is diagnostic.

Erythema Nodosum ICD10 code L52

Pathogenesis

The pathogenesis of erythema nodosum is poorly understood. Erythema nodosum, like urticaria, is not a primary disease but rather represents a reaction pattern to a variety of different antigenic insults, with the most common underlying factors being β-hemolytic streptococcal infection, drug therapy (particularly birth control pills), which includes herbal therapy (e.g., Echinacea), sarcoidosis, ulcerative colitis, tuberculosis, viral infections, Crohn disease, deep fungal infections, Behçet syndrome, pregnancy, and underlying malignancy. Patients with β-hemolytic streptococcal infection typically develop erythema nodosum 2 to 3 weeks after the infection, which is usually associated with an elevated antistreptolysin O (ASO) titer.

Drug-Induced Erythema Nodosum

- Azathioprine
- Celecoxib
- Echinacea herbal therapy
- Gold
- Oral contraceptives
- Sulfonamides

Clinical Features

- This is the most common form of panniculitis; it may occur at any age, including children, but the peak incidence is in patients between 20 and 30 years of age.
- It is three to six times more common in women than men.
- Patients may demonstrate a prodrome of fever, malaise, and arthralgias.
- Primary lesions are tender, erythematous subcutaneous nodules of variable size (1–15 cm); they are never sharply demarcated.
- It is predominantly acral, with the classic location being the anterior shins (Fig. 15.1).
- Less common locations include other parts of the leg (Fig. 15.2) and arms (Fig. 15.3).
- There are typically less than 10 lesions; however, more than 50 lesions are seen in rare patients.
- Ulceration does not occur.

Diagnosis

- Clinical presentation is usually characteristic, although the presentation may be mimicked by other forms of panniculitis, such as erythema induratum, or deep vasculitis, such as periarteritis nodosa.
- Routine laboratory tests that should be done include a throat culture to rule out active streptococcal infection and an ASO titer to rule out recent streptococcal infection.
- In select cases, consider testing stool for *Yersinia* infection and/or chest x-ray to rule out sarcoidosis or an underlying deep fungal infection.
- The histologic findings on biopsy—a 5-mm or larger punch biopsy or incisional biopsy that includes fat—is typically needed and is usually diagnostic.

Treatment

- No treatment is needed in mild cases but is always an option, because most cases are self-limited.
- Using nonsteroidal antiinflammatory drugs (NSAIDs) for pain relief and reduction of inflammation is recommended as initial treatment in more severe cases.
- Very painful or severe cases quickly respond to prednisone, 10 to 40 mg per day for 3 to 7 days. This therapy should be used with caution if an underlying infection is suspected.
- Oral potassium iodide (SSKI) is an alternate therapy, starting at two drops tid and increasing up to six drops tid.

Clinical Course

Individual lesions typically last 3 to 6 weeks, although new lesions may continue to develop. Rare patients may develop chronic erythema nodosum that is more likely to be unilateral.

Fig. 15.1. Typical erythema nodosum of the anterior shins in a young woman. Note the discoloration of some of the lesions on the right leg. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 15.2. Erythema nodosum on the lateral legs in a patient. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 15.3. Unusual location for erythema nodosum on the arm of a patient. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Erythema Induratum ICD10 code A18.4

Pathogenesis

The term *erythema induratum* (of Bazin) is often used interchangeably with the term nodular vasculitis, although some dermatologists reserve the former for cases that are tuberculosis-associated and the latter term for those that are not. The pathogenesis is not entirely understood, although in cases associated with tuberculosis, polymerase chain reaction (PCR) studies have demonstrated *Mycobacterium tuberculosis* DNA in more than 75% of cases, suggesting that it is a hypersensitivity reaction. Less common associations have included Crohn disease, other infections, and, very rarely, medications (e.g., propylthiouracil).

Clinical Features

- It usually affects young and middle-aged women, although any age or gender can be affected.
- It is more common in clinical populations with a strong exposure to tuberculosis.
- It is usually located on the calves and shins, although the trunk, upper extremities, and even the face can be affected.
- The primary lesion is comprised of one or more painful, erythematous, subcutaneous nodules (Fig. 15.4).
- Ulceration is frequently present in one or more lesions (Figs. 15.5 and 15.6), a finding that is not found in erythema nodosum.

Diagnosis

- In regard to the clinical presentation, be particularly suspicious in a patient with a known history of tuberculosis or exposure to individuals with active tuberculosis. The differential diagnosis includes erythema nodosum, lupus panniculitis, polyarteritis nodosa, and other rare forms of panniculitis.
- The diagnosis is typically established by a 5- to 8-mm punch biopsy or incisional biopsy. It is critical that the biopsy includes adequate subcutaneous fat. The histologic findings may be strongly suggestive or diagnostic. Cases associated with tuberculosis are culture negative and do not demonstrate organisms with special stains; they can only be demonstrated by PCR assay, which is not routinely available.
- Chest x-rays and a purified protein derivative (PPD) skin test are strongly recommended in all cases to exclude evidence of tuberculosis. If tuberculosis is strongly suspected, consider diluting the PPD to 1:10, because patients may demonstrate very exuberant reactions.

Treatment

- The treatment of choice is to identify any underlying cause (e.g., tuberculosis) and treat that disorder or withdraw any potentially offending drug.
- Oral potassium iodide (SSKI) is an alternate therapy, starting at two drops tid and increasing up to six drops tid.
- NSAIDs may be used to reduce pain and inflammation.
- Use oral prednisone, starting at a dose of 10 to 40 mg/day, that is tapered as quickly as possible as the patient responds to therapy. Prednisone is not recommended until active tuberculosis has been excluded.

Clinical Course

Untreated lesions tend to persist for months or even years and, when the lesions resolve, they may heal with atrophy and variable scarring.

Fig. 15.4. Classic location of erythema induratum on the posterior aspect of the calf of a patient. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 15.5. Patient with indurated subcutaneous plaques of erythema induratum, with early ulceration. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 15.6. Patient with ulcerated erythema induratum of the thigh that was secondary to undiagnosed tuberculosis.

Pancreatic Panniculitis ICD10 code M79.3

Pathogenesis

Pancreatic panniculitis is the result of damage to the pancreas that releases enzymes such as lipase and/or amylase, which then digest and damage the subcutaneous fat. This damage to the fat (saponification) results in necrosis and the accumulation of acute inflammatory cells and calcium. Although pancreatitis is the most common cause, other cases have been associated with pancreatic cancer and, rarely, medications. Approximately 2% of all patients with pancreatitis will develop pancreatic panniculitis.

Clinical Features

- It typically affects adult patients.
- There is an acute onset of single or, more commonly, multiple subcutaneous nodules, which are primarily distributed on the lower legs, although other sites can be affected. The knees and ankles are especially common sites of involvement.
- Initially, nodules are typically very erythematous (Figs. 15.7 and 15.8).
- Developed nodules may become fluctuant (Fig. 15.9) and may ultimately drain a yellowish material.
- Symptoms vary; patients may be asymptomatic or feel extreme pain.
- Painful acute arthritis and, less commonly, polyserositis (e.g., pleuritis, pericarditis, synovitis) may be present.
- Lytic bone lesions are variably present due to the same process occurring in the intraosseous fat.
- Abdominal ascites may be present. This can be due to pancreatic disease or panniculitis of the intra-abdominal fat.

Diagnosis

- In particular, the clinical presentation may involve the combination of very painful subcutaneous nodules associated with arthritis and abdominal pain. Patients may also demonstrate all the other features of acute pancreatitis (e.g., low-grade fever, tachycardia, hypotension).
- Pancreatic enzyme studies should be carried out. Serum amylase and lipase levels should always be ordered.
- A complete blood count (CBC) should be done; leukocytosis, eosinophilia, and an elevated erythrocyte sedimentation rate (ESR) are frequently present.
- A computed tomography (CT) scan can also be used to support the diagnosis of pancreatitis.
- A 4-mm or larger punch biopsy or incisional biopsy can yield findings that are histologically specific and can be diagnostic, even in the absence of a history.

Treatment

- There is no specific recommended treatment of the pancreatic panniculitis.
- Treatment is aimed at management of the primary pancreatitis (e.g., analgesics, intravenous fluids, no oral alimentation).

Clinical Course

The cutaneous lesions often drain and resolve over a period of weeks, leaving variable atrophy and scar. The patient's clinical outcome is dependent on the course of the pancreatitis or pancreatic adenocarcinoma, both of which can be fatal, as demonstrated by the patient depicted in Fig. 15.7, who had a fatal outcome from his alcoholic-induced acute pancreatitis.

Fig. 15.7. Pancreatic panniculitis in a patient with fatal acute pancreatitis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 15.8. Patient with bilateral tender erythematous nodules of pancreatic fat necrosis.

Fig. 15.9. Bilateral suppurative pancreatic fat necrosis that localized to the tops of the patient's boots. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Lupus Panniculitis ICD10 code L92.2

Pathogenesis

Lupus panniculitis, also called lupus profundus and lupus erythematosus panniculitis, is relatively uncommon but is seen in approximately 1% to 3% of all patients with cutaneous lupus erythematosus. It may be seen in discoid lupus erythematosus (≈two-thirds of cases), subacute cutaneous lupus erythematosus (uncommon), and systemic lupus erythematosus (about 5% of cases) and may arise de novo. Like other forms of lupus erythematosus, it is an autoimmune disease; however, the reasons why it localizes to the subcutaneous fat in some patients is not known.

Clinical Features

- The patient is typically adult or elderly, with a median age of 48 years in one study (range, 20–71 years).
- Like most forms of lupus erythematosus, women are more commonly affected than men.
- It tends to affects fatty areas, such as the breasts (Fig. 15.10), periorbital region (Fig. 15.11) upper lateral arms (Fig. 15.12), thighs, and buttocks.
- There is an acute onset of single or, more commonly, multiple subcutaneous nodules.
- The primary lesions are erythematous nodules or subcutaneous plaques, which may be tender.
- Developed lesions may ulcerate or become firm due to fibrosis and sclerosis, which develops in persistent lesions.
- Patients may demonstrate lupus erythematosus panniculitis de novo or develop it in association with discoid or systemic lupus erythematosus.

Diagnosis

- The clinical presentation of subcutaneous nodules in a patient with known discoid or systemic lupus erythematosus should strongly raise the possibility of lupus erythematosus panniculitis.
- Panniculitis with overlying skin changes of discoid lupus erythematosus (e.g., hypopigmentation or hyperpigmentation, follicular hyperkeratosis) is also obviously strongly suggestive.
- Diagnostic treatment of choice is a 5- to 8-mm punch biopsy or incisional biopsy that includes adequate fat. In most cases, the diagnosis can be established by the histologic findings from a single biopsy if enough fat is present. Patients should be warned that the biopsies in lupus erythematosus panniculitis frequently break down and form ulcers that may take weeks to months to heal.
- Direct immunofluorescence of lesional skin is useful in select cases.
- Patients should have routine screening laboratory tests for lupus erythematosus, including screening antinuclear antibody (ANA, and ANA panel if positive) and total complement activity (CH50) tests, CBC, and determinations of levels of blood urea nitrogen (BUN), creatinine, and uric acid (UA).

Treatment

- Hydroxychloroquine (200 mg PO, qd or bid) is the drug most commonly used as a corticosteroid-sparing agent for long-term management. In recalcitrant cases, quinacrine (100 mg PO, qd) may be added.
- Severe or recalcitrant cases may require oral prednisone, typically in the 20- to 40-mg per day dose range, which is titered to the patient's response.

Clinical Course

This form of panniculitis tends to be persistent and chronic and, even with even optimal therapy, the lesions may ulcerate, develop scar, or leave permanent areas of fat atrophy.

Fig. 15.10. Lupus panniculitis affecting the subcutaneous tissue of the breast in a patient with systemic lupus erythematosus. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 15.11. Patient with lupus panniculitis affecting the subcutaneous tissue of the orbit. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 15.12. Patient with lupus panniculitis affecting the upper arm, with atrophy and a surface scar. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Pathogenesis

Granuloma annulare is a relatively common granulomatous disease of uncertain pathogenesis in which collagen is destroyed by a granulomatous host response (necrobiotic granuloma). In most cases, the disease is confined to the dermis. However, in some cases, the process affects the collagen of the dermis and subcutaneous tissue or is directed against the collagen only of the subcutaneous tissue. Although it is usually called deep granuloma annulare or subcutaneous granuloma annulare because of the clinical resemblance to rheumatoid nodules, this deeper presentation has also been referred to as pseudorheumatoid nodules.

Clinical Features

- GA typically affects young children, with most cases occurring between the ages of 3 and 6 years. Adults and even infants younger than 1 year can develop this disorder.
- Lesions are usually found on the lower extremities, with a predilection for the anterior pretibial areas, toes (Fig. 15.13), and ankles (Fig. 15.14).
- In infants and young children, the head (Fig. 15.15) is not uncommonly involved and may raise clinical concern for a neoplastic process.
- The primary lesion is a deep subcutaneous nodule that may or may not involve the overlying dermis.
- The lesions may be skin colored or demonstrate a subtle violaceous discoloration.
- The number of lesions is highly variable and can vary from one lesion to multiple lesions.
- The primary lesions are usually asymptomatic.
- In about 25% of patients, there may be more characteristic superficial lesions, which are annular.

Diagnosis

- The clinical presentation of asymptomatic subcutaneous nodules of the lower legs in an infant or young child is suggestive but not specific. This is because other inflammatory disorders, including sarcoidosis, foreign body granulomas, and rheumatoid nodules, in addition to benign tumors (e.g., giant cell tumor of the tendon sheath) and malignant tumors, would be in the clinical differential diagnosis.
- The presence of the typical superficial lesions of granuloma annulare is an important finding that would so strongly support the diagnosis that a biopsy would not be needed.
- The diagnosis can only be established with certitude with a deep 4-, 5-, or 6-mm punch biopsy or incisional biopsy that includes the subcutis. The histologic findings are diagnostic.

Treatment

- No treatment is a viable option because this is an asymptomatic benign condition that will typically resolve on its own.
- For patients for whom there is parental pressure to treat the lesion, or if there is discomfort from the lesions when pressure is put on the lesion by footwear, intralesional corticosteroids, from 2.5 to 10 mg/mL, are the treatment of choice. The response can be monitored; if there is no or minimal response at 4 to 6 weeks, the treatment can be repeated and dose increased, if needed.

Clinical Course

Subcutaneous granuloma annulare is a chronic disorder that usually slowly improves over a period of months or even years. It should be noted that we have seen patients for whom a partial biopsy has been therapeutic, with all the lesions being resolved following the procedure.

Fig. 15.13. Patient with subcutaneous granuloma annulare presenting as subcutaneous nodules, with focal violaceous discoloration on the second and third toes. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 15.14. Subcutaneous granuloma of the ankle of a young child. (From the William Weston Collection, Aurora, CO.)

Fig. 15.15. Subcutaneous presentation of granuloma annulare on the forehead of a young child. (From the Joanna Burch Collection, Aurora, CO.)

Rheumatoid Nodules ICD10 code M06.3

Pathogenesis

Rheumatoid nodules represent a granulomatous host response that surrounds necrotic collagen. It may be associated with juvenile and classic adult rheumatoid arthritis. A rare variant, called rheumatoid nodulosis syndrome, consists of the rapid onset of rheumatoid nodules associated with a high-titer rheumatoid factor and no evidence of active arthritis. In about 10% of patients, rheumatoid nodules are present at the time of presentation. Although not discussed in this section, it is important to understand that rheumatoid nodules may affect other structures of the body (e.g., lungs, vocal cords).

Clinical Features

- Rheumatoid nodules are seen in about 10% of cases of juvenile rheumatoid arthritis and in about 25% of cases of adult rheumatoid arthritis.
- The lesions are usually distributed over the elbow, proximal ulnar bony surfaces (Fig. 15.16), interphalangeal joints of the fingers (Fig. 15.17), feet, and sacrum.
- The primary lesions are usually skin colored to slightly erythematous to slightly violaceous dermal and/or subcutaneous nodules, which may be movable or demonstrate attachment to periosteum or tendons.
- The size of the lesions is highly variable and may vary from 1 mm to over 5 cm (see Fig. 15.16).
- Typically, patients are asymptomatic unless they are traumatized.
- The overlying epidermis is typically intact and uninvolved, although some patients may demonstrate perforation of necrotic collagen at two or more sites (Fig. 15.18) or may demonstrate ulceration due to trauma or infection.

Diagnosis

- The clinical presentation of subcutaneous nodules in a patient with known rheumatoid arthritis is usually diagnostic.
- The diagnosis can only be established with certitude with a deep 4-, 5-, or 6-mm punch biopsy or incisional biopsy that includes the subcutis. The histologic findings are usually diagnostic, although rare cases may be difficult to differentiate from subcutaneous granuloma annulare.
- If the patient does not have known rheumatoid arthritis, an initial screening evaluation might include x-rays of joints with evidence of arthritis, rheumatoid factor (RF), CBC (patients may have anemia and/or thrombocytosis), ESR, C-reactive protein, and screening ANA (≈25% of patients with rheumatoid arthritis will have a positive ANA).

Treatment

- The primary treatment of rheumatoid nodules is the management of the underlying rheumatoid arthritis. The lesions usually but not always slowly resolve with treatment of the rheumatoid arthritis.
- Initial therapy usually consists of NSAIDs, with or without low-dose prednisone.
- Patients who do not respond to this therapeutic regimen are usually treated with immunosuppressive drugs such as methotrexate, hydroxychloroquine, minocycline, cyclosporine, and biologic agents. Methotrexate and biologic agents have been paradoxically reported to exacerbate rheumatoid nodules.
- Large lesions that interfere with activity can be excised, although some lesions do recur.
- Large lesions can also be injected with 10 to 40 mg/mL of triamcinolone.

Clinical Course

Rheumatoid nodules are chronic in untreated patients and may continue to enlarge. In treated patients, the lesions slowly resolve with management of the rheumatoid arthritis.

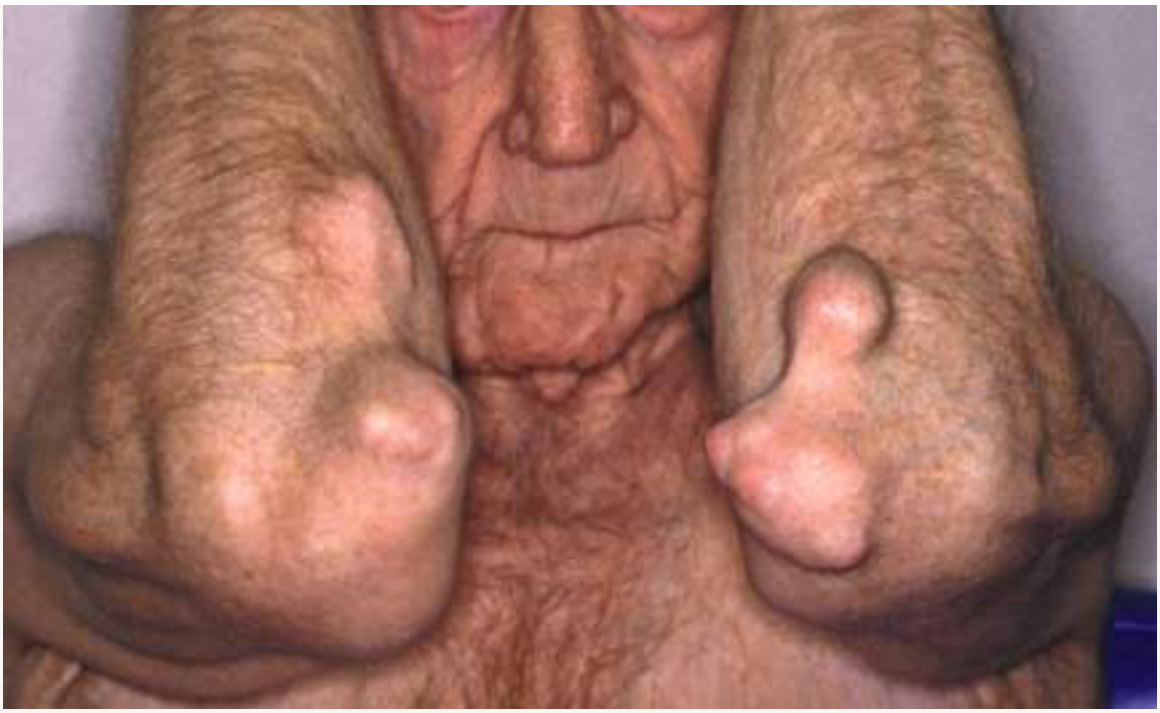

Fig. 15.16. Patient with numerous, unusually large rheumatoid nodules of the elbow and forearm. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 15.17. Patient with two smaller, lightly red rheumatoid nodules of the finger. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 15.18. Patient with large rheumatoid nodule, with superficial crusts representing foci of perforation of necrotic collagen. Several smaller nodules are also present.

Cutaneous Polyarteritis Nodosa ICD10 code M30.0

Pathogenesis

Cutaneous polyarteritis (panarteritis) nodosa is a vasculitis that preferentially involves small to medium-sized arteries of the deep dermis or subcutaneous tissue. Although some cases are associated with hepatitis B or C infection or inflammatory bowel disease, most cases do not have an identifiable association. However, some cases also present as subcutaneous nodules, which are indistinguishable from a primary panniculitis such as erythema nodosum. Rare cases have been drug-induced; minocycline and propylthiouracil are the most commonly implicated medications.

Clinical Features

- Cutaneous PAN may affect those of any age, including neonates.
- Bilateral erythematous to reddish-brown nodules that appear to be subcutaneous (Figs. 15.19 and 15.20) are present. Some lesions may show a slight tendency to be linear in configuration. Note that the most superior nodule in Fig. 15.19 demonstrates a linear configuration at its bottom pole.
- It is characteristically tender with palpation and can also be spontaneously painful.
- Lesions may ulcerate, although this is not common.
- Some cases may also be associated with a focal livedo (netlike) pattern of unaffected blood vessels.
- Constitutional symptoms are variably present, but patients frequently report fatigue and myalgia.
- Low-grade fever is frequently present.
- Rarely, patients may have an associated peripheral neuropathy.

Diagnosis

- The clinical presentation of lesions, without any evidence of a linear configuration, is not diagnostic, and the differential diagnosis would usually include erythema nodosum and erythema induratum. If there is any suggestion of a linear lesion, the clinical presentation is strongly supportive of polyarteritis nodosa.
- Diagnosis is confirmed by a 6- to 8-mm punch or an incisional biopsy of lesional skin. The histologic findings are usually diagnostic.
- Direct immunofluorescent studies, in contrast to most forms of vasculitis, yield negative or nonspecific results.
- Laboratory studies could include a CBC with differential (eosinophilia is usually absent in contrast to systemic polyarteritis nodosa), ESR (usually normal or mildly elevated, in contrast to systemic polyarteritis nodosa), antineutrophil cytoplasmic antibody (ANCA) determination, and serologic testing for hepatitis B and C.

Treatment

- Treatment may be supportive with NSAIDs because mild cases often resolve spontaneously.
- Oral prednisone, typically starting at a dose of 40 mg/day with a rapid taper, is the most commonly used treatment. In many cases, after several weeks, the prednisone can be discontinued.
- Alternative treatments, including oral methotrexate (5–15 mg/week), mycophenolate mofetil (1 g PO bid), and azathioprine (50–100 mg/day), have all been used with success.

Clinical Course

Cutaneous polyarteritis nodosa is a relatively benign vasculitis that can usually be successfully brought into complete remission, although occasional cases may be recurrent. Fortunately, only rare cases transition into the more severe systemic polyarteritis nodosa.

Fig. 15.19. Numerous tender, red, subcutaneous nodules of the lower leg and ankle in a patient with positive hepatitis B serology. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 15.20. Patient with numerous tender, red, subcutaneous nodules of the lower leg. Note that the most superior lesion has a linear configuration at the bottom pole, a clinical clue suggesting the diagnosis of cutaneous polyarteritis nodosa. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 16
Annular and Targetoid Lesions

Key Term
Erythema chronicum migrans

Annular and targetoid lesions are distinct clinical configurations that include many common disorders, such as dermatophyte infections, granuloma annulare, various reactive conditions, and even serious diseases (e.g., Lyme disease, leprosy).

Differential Diagnosis of Annular and Targetoid Lesions

Without Scale

- Actinic granuloma
- Borderline leprosy (can have scale)
- Erythema annulare centrifugum (see below)
- Erythema chronicum migrans
- Erythema multiforme
- Erythema marginatum
- Granuloma annulare
- Necrobiosis lipoidica
- Neonatal lupus erythematosus (can have scale)
- Subacute lupus erythematosus

With Scale

- Erythema annulare centrifugum (see above)
- Pityriasis rosea
- Seborrheic dermatitis (seborrhea petaloides)
- Tinea corporis, tinea cruris, tinea faciei
- Tuberculoid leprosy

IMPORTANT HISTORY QUESTIONS

How long have the lesions been present?

This question is useful in distinguishing among disorders that are typically acute, such as erythema migrans and erythema multiforme, and conditions that tend to be chronic, such as granuloma annulare, tuberculoid leprosy, and necrobiosis lipoidica.

Have you had a similar rash in the past?

Erythema multiforme, for example, tends to occur as repetitive episodes.

What medications do you take?

A medication history is important because erythema multiforme and erythema annulare centrifugum may be drug induced.

Where have you lived?

Leprosy is endemic to much of the world, including, in the United States, Texas and Louisiana.

Where have you been recently?

Travel to an area of the country where Lyme disease is endemic is important (see box).

Have you been camping outdoors or with animals?

Lyme disease is caused by a tick bite, and it is also useful to inquire directly about insect and arthropod bites.

Are you diabetic?

Necrobiosis lipoidica diabeticorum and, to a slightly lesser extent, granuloma annulare are both associated with diabetes.

Lyme Disease in the United States

In 2014, the Centers for Disease Control and Prevention (CDC) reported that 96% of all confirmed cases of Lyme disease were found in these 14 states:

Connecticut	New Jersey
Delaware	New York
Maine	Pennsylvania
Maryland	Rhode Island
Massachusetts	Vermont
Minnesota	Virginia
New Hampshire	Wisconsin

IMPORTANT PHYSICAL FINDINGS

Do the lesions demonstrate scale?

This is an important clinical feature because dermatophyte infections and erythema annulare centrifugum typically demonstrate scale, whereas granuloma annulare, erythema marginatum, and erythema migrans typically lack appreciable scale.

What is the distribution of the lesions?

Distribution is important because some diseases have a characteristic pattern. For example, necrobiosis lipoidica usually affects the pretibial surface, whereas erythema multiforme often involves distal acral skin. Symmetric distribution may also be more characteristic of a systemic reactive condition. Also, some diseases, such as actinic granuloma and neonatal lupus erythematosus, may be photodistributed.

Are there any mucosal lesions?

The presence of mucosal lesions (e.g., ocular, oral, genital) is an important finding in erythema multiforme.

Tinea Corporis, Tinea Faciei, and Tinea Cruris ICD10 codes B35.4, B35.6

Introduction

When dermatophytes affect glabrous skin, such as the face, groin, and trunk, annular lesions often result—hence, the common name, "ringworm." Dermatophyte infections are usually acquired from other humans but may also be acquired from other animals and from the soil. The three species most often associated with cutaneous infections in humans include *Trichophyton rubrum, Trichophyton mentagrophytes,* and *Epidermophyton floccosum*. Outbreaks may be seen among people in close contact, such as wrestling teams (tinea corporis gladiatorum) prisoners or persons who are institutionalized.

Clinical Features

- The primary lesion in dermatophyte infections is an erythematous annular plaque that is nearly always scaly (Figs. 16.1 and 16.2), particularly at the peripheral edge. The amount of scale is variable.
- Rarely, concentric annular lesions may resemble a topographic map.
- In tinea cruris (so-called jock itch), the lesions typically involve the inguinal crease and characteristically spare the scrotum (Fig. 16.3).
- A subset of patients may also demonstrate follicular lesions, especially if a topical corticosteroid has been used by the patient, causing localized immunosuppression.
- In rare cases, the peripheral edge may be pustular, or bullae may form (Fig. 16.4).

Diagnosis

- In many cases, the diagnosis may be strongly suspected on clinical grounds, but it is important to remember that even skilled dermatologists may mistake erythema annulare centrifugum, granuloma annulare, and even tuberculoid leprosy, for a dermatophyte infection.
- A potassium hydroxide (KOH) preparation, taken from the active edge of the lesion and examined by skilled persons, is diagnostic (see Chapter 2).
- A culture of scrapings from the active edge may also be diagnostic.
- The diagnosis may also be made by a skin biopsy, although clearly it is prudent not to perform a biopsy unless necessary. Also, a pathologist may miss the organism without use of special stains, so it is important for clinicians to indicate suspicion of a fungal infection on submission.

Treatment

- First-line treatment of uncomplicated dermatophyte infections of glabrous skin includes topical allylamines, such as terbinafine cream 1%, available over the counter, applied bid to affected areas for 1 week beyond any visible infection. This usually takes 2 to 3 weeks.
- Near-equivalence is seen with topical azoles (e.g., clotrimazole, miconazole) and ciclopirox olamine.
- Systemic therapy should be considered for patients with extensive or follicular involvement. Typically, oral terbinafine (250 mg/day for 7–14 days) or itraconazole (100–200 mg/day for 7–14 days) is used in these cases.
- Tinea infections among athletes may require evaluation of the entire team to prevent or mitigate a larger outbreak. Most cases are acquired by skin-to-skin contact, although rare cases may be acquired from fomites (e.g., wrestling mats). Fomites (e.g., headgear, padding) should be cleaned and not shared.
- Infected teams should be treated with oral medications, if possible, until the outbreak has been controlled.

Fig. 16.1. Patient with tinea corporis, with highly inflammatory annular lesions. Note that a very early lesion is not yet annulare. (From the William Weston Collection, Aurora, CO.)

Fig. 16.2. Close-up of a lesion of tinea corporis. Note the trailing scale. The blood is the result of overzealous scraping for a potassium hydroxide (KOH) preparation.

Fig. 16.3. Patient with classic case of tinea cruris, with an annular edge. Note that the scrotum is spared. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 16.4. Patient with tinea faciei presenting as annular lesions with marked induration and scale to the point that papulosquamous disease, such as psoriasis, is in the clinical differential diagnosis.

Lyme Disease ICD10 code L92.0

Pathogenesis

Lyme disease is a tickborne systemic infection caused by the spirochete, *Borrelia burgdorferi.* The most common vectors in the United States are the deer tick *(Ixodes scapularis)* and, in the western United States, the black-legged tick *(Ixodes pacificus).* Although adults and nymphs may transmit the disease, the nymphs are more often the source of infection. Lyme disease has been reported in nearly every state, but a travel history is often involved (see box, above) outside of the East Coast, West Coast, or Great Lakes areas. Because of increased outdoor exposure during the summer months, children are affected more often than adults.

Clinical Features

- In many cases, history of a tick bite cannot be elicited.
- Skin lesions appear between 3 and 30 days after tick attachment, with an average of 9 days.
- The primary lesion is an annular ring of erythema, with variable induration (erythema chronicum migrans), which expands at a rate of 1 to 2 cm/day and may reach up to 60 cm in greatest diameter (Fig. 16.5).
- A small central papule that represents the tick bite may (or may not) be observed, which may give the appearance of a bull's eye (Fig. 16.6).
- Lesions may be pruritic.
- The primary lesion lasts up to 4 weeks and may become hemorrhagic (Fig. 16.7).
- Some patients may get one or more secondary smaller annular lesions (from spirochetemia).
- Associated constitutional findings include fever, lymphadenopathy, headache, and malaise.

Diagnosis

- An erythematous annular lesion after travel to a highly endemic area should raise suspicion of erythema migrans.
- Punch biopsy of a skin lesion for culture (modified Barbour-Stoenner-Kelly medium) is the only diagnostic test and is positive in about 75% of cases within 4 weeks. This technique is not widely available.
- Serologic screening tests include the enzyme-linked immunosorbent assay (ELISA), but immunoglobulin M (IgM) titers become positive after 30 days, and IgG titers become positive between 45 and 60 days; this is not the period in which the rash is observed.
- A 4- to 6-mm punch biopsy can manifest features that are consistent with but not only diagnostic of erythema migrans. In about one-third of cases, special stains may demonstrate the spirochete.

Treatment

- Prophylactic treatment of tick bites is controversial, but, at present, it is reasonable to treat patients in endemic areas with a single dose of doxycycline (200 mg) within 72 hours of a tick bite.
- Adults with suspected or documented erythema migrans are treated with doxycycline (100 mg PO bid for 14–21 days), amoxicillin (500 mg PO tid for 14–21 days), or cefuroxime axetil (500 mg bid for 14–21 days). Doxycycline is also effective against human granulocytic ehrlichiosis, which is a co-infection seen in about 10% of Lyme disease cases.
- Children with suspected or documented erythema migrans may be treated with doxycycline (100 mg PO bid for 14–21 days) if older than 9 years, amoxicillin (30–50 mg/kg per day for 14–21 days), erythromycin (30 mg/kg per day for 14–21 days), or phenoxymethylpenicillin (25–50 mg/kg per day for 14–21 days).

Clinical Course

Untreated erythema chronicum migrans can result in disseminated disease that may involve other organ systems.

Fig. 16.5. Patient with large, irregular, annular lesion of the lower leg, with a small secondary lesion at the superior pole. (From the William Weston Collection, Aurora, CO.)

Fig. 16.6. Patient with annular lesion with central bull's eye that represents the site of the tick attachment. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 16.7. Patient with hemorrhagic annular variant of erythema chronicum migrans. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Erythema Annulare Centrifugum ICD10 code L53.1

Pathogenesis

Erythema annulare centrifugum (EAC), like urticaria or erythema multiforme, is a reactive condition that can result from multiple immunologic stimuli or other systemic perturbations of homeostasis, even conditions such as pregnancy. The precise immunologic mechanism whereby it develops is not well understood.

Known Causes of Erythema Annulare Centrifugum

- Infections
  - Candidiasis
  - Dermatophyte infections
  - Viral infections (molluscum contagiosum, herpes zoster)
- Infestations
  - Ascariasis
  - *Phthirus pubis*
- Medications
  - Amitriptyline
  - Ampicillin
  - Antimalarials
  - Cimetidine
  - Finasteride
  - Gold
  - Hydrochlorothiazide
  - Nonsteroidal antiinflammatory drugs (NSAIDs)
  - Piroxicam
  - Thiacetazone
- Foods
  - Blue cheese (*Penicillium*)
- Internal malignancies
- Pregnancy

Clinical Features

- No predilection exists regarding gender, race, or age.
- Multiple lesions are usually present.
- Superficial variants of EAC present as annular or polycyclic lesions, with an erythematous edge and trailing scale, which extend in centrifugal fashion (Figs. 16.8 to 16.10).
- Deeper variants present as annular or polycyclic lesions, with an erythematous edge but without scale and with greater induration, which extend in centrifugal fashion (Fig. 16.11).
- Lesions may be asymptomatic or may produce variable pruritus.

Diagnosis

- In most cases, the clinical history and appearance are distinctive, and a clinical diagnosis may be rendered.
- In some cases, a 3- or 4-mm punch biopsy manifests histology that supports the diagnosis.
- Antinuclear antibody (ANA) testing should be considered as a screening measure because lupus erythematosus and other connective tissue diseases are in the differential diagnosis.

Treatment

- Identification and removal of the antigenic or systemic stimulus represents ideal management.
- Potent topical corticosteroids are usually of minimal benefit but may improve the appearance of the lesions while not affecting the overall clinical course.
- Case reports have documented an anecdotal response to topical calcipotriol.
- Oral antihistamines may relieve pruritus but do not alter the clinical appearance or course of the disease.
- In severe cases, oral hydroxychloroquine (200–400 mg/day) may produce a partial or complete remission over a period of 1 to 3 months.

Clinical Course

Lesions of EAC tend to last weeks to months, or even years, with spontaneous (cryptic) resolution. In a study of 66 cases, the mean duration for spontaneous resolution was found to be 2.8 years. Some cases may recur, even after spontaneous resolution. The most rapid and effective resolution can be provided if the underlying antigenic stimulant or systemic perturbation can be identified and avoided, mitigated, or treated.

Fig. 16.8. Dramatic example of erythema annulare centrifugum demonstrating lesions within lesions in addition to arciform lesions.

Fig. 16.9. Infant with erythema annulare centrifugum demonstrating incomplete annular lesions. (From the William Weston Collection, Aurora, CO.)

Fig. 16.10. Patient with superficial variant of erythema annulare centrifugum demonstrating the frequently present trailing scale. Note that the erythema is difficult to appreciate in darker skin.

Fig. 16.11. Patient with deep variant of erythema annulare centrifugum, with incomplete annular lesions. Trailing scale is frequently absent in this clinical variant.

Erythema Marginatum ICD10 code L53.2

Pathogenesis

Erythema marginatum is a cutaneous finding associated with acute rheumatic fever. The lesions typically develop 7 days to months after the onset of the streptococcal pharyngitis or, rarely, streptococcal skin infections. Erythema marginatum occurs in about 10% cases of acute rheumatic fever. Although acute rheumatic fever is less common in the United States and other developed countries, it continues to be a major concern in underdeveloped countries, with an estimated 470,000 new cases occurring worldwide each year, causing 200,000 deaths.

Clinical Features

- Acute rheumatic fever is most common in children older than 3 years and in adolescents and young adults.
- Primary lesions are asymptomatic, erythematous, annular, or polycyclic wheal-like lesions (Figs. 16.12 to 16.14). Some patients may be unaware of the lesions at all.
- The lesions characteristically migrate rapidly (as fast as 2–10 mm in 12 hours), and this movement can be documented with use of permanent ink markers on the skin (see Figs. 16.12 and 16.13).
- Other primary lesions that may be present include erythematous macules (e.g., erythema circinatum), papular lesions (e.g., erythema papulatum), and subcutaneous nodules (e.g., rheumatic fever nodules).
- Lesions are most common on the trunk and proximal extremities and rarely involve the face.

Diagnosis

- Acute rheumatic fever should be excluded in anyone with unexplained migratory annular lesions.
- A recent or active β-hemolytic streptococcal infection or recent history of scarlet fever should raise suspicion of the diagnosis, particularly in children, adolescents, and young adults.
- The throat should be swabbed for testing with a rapid antigen detection test (RADT).
- Other tests that should be performed include throat culture, antistreptolysin O (ASO) titer, anti–deoxyribonuclease B study (these latter two studies may reflect past disease but not necessarily current disease), and electrocardiography, usually with a prolonged PR interval.
- A 3- or 4-mm punch biopsy from the active erythematous edge may reveal supportive histology but is not diagnostic or exclusionary.

Treatment

- Cutaneous lesions do not need to be treated. Rheumatic fever requires treatment that includes antibiotics, aspirin or other NSAIDs, and bed rest. Patients who fail this regimen may need to also take oral prednisone.
- Cardiac and central nervous system (CNS) manifestations must be treated.
- Initial antibiotics may include penicillin G benzathine, penicillin G procaine, and penicillin V and VK.
- Long-term management often includes 5 years or more of prophylactic antibiotics, which may include oral penicillin V or VK, oral erythromycin, or oral sulfadiazine, depending on the circumstances.

Fig. 16.12. Patient with erythema marginatum presenting as irregular red annular lesions on the trunk. Note that the margins have been marked to evaluate whether the lesions are migratory. The patient also has macular lesions, called erythema circinatum. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 16.13. Same patient as depicted in Fig. 16.12 15 hours later demonstrating the significant migration of the annular edges of the lesion.

Fig. 16.14. Different patient with dramatic erythematous migratory lesions of erythema marginatum.

Neonatal Lupus Erythematosus ICD10 code L53.2

Pathogenesis

Neonatal lupus erythematosus (NLE) is a form of connective tissue disease caused by autoantibodies transmitted from the mother to the fetus. The antinuclear antibody that is invariably present is anti-Ro (anti-SSA) although, less commonly, anti-La (anti-SSB) antibodies may also be present.

Clinical Features

- Lesions may be present at birth or may develop in the first weeks of life.
- Primary lesions affect the head and neck, with the scalp and periocular area being most often involved, leading to a so-called "raccoon eyes" (Fig. 16.15) appearance. Less often, lesions occur on the trunk, extremities, or groin.
- The lesions may be photodistributed.
- Lesions may or may not manifest significant scale (Fig. 16.16) or may even be crusted (Fig. 16.17). Less often, the lesions may be hemorrhagic.
- Internal manifestations include congenital heart block, seen in up to 50% of cases (first-degree, second-degree, or third-degree), hepatobiliary disease, seen in up to 10% of cases, and hematologic manifestations (especially thrombocytopenia), seen in up to 10% of cases.
- The mothers usually appear normal but are positive for ANA–anti-Ro (anti-SSA) autoantibodies. If cutaneous disease is present in the mother, it appears as subacute cutaneous lupus erythematosus.

Diagnosis

- Unexplained annular erythema that preferentially affects the face and scalp of neonates should raise suspicion for the diagnosis.
- Unexplained congenital heart block, which may manifest as cardiomyopathy, hepatobiliary disease, or hematologic disease should mandate a comprehensive evaluation for NLE.
- Serologic testing for ANA–anti-Ro (anti-SSA) autoantibodies establishes the diagnosis.
- Other studies include electrocardiography (most important), liver function tests (LFTs), and complete blood count (CBC).
- A 3- or 4-mm punch biopsy from the active erythematous edge for H&E and direct immunofluorescent studies can be done. The results often support the diagnosis, but this is not usually required.

Treatment

- Skin lesions resolve without treatment, although a low-potency topical corticosteroid, such as hydrocortisone 1% or 2.5% for facial lesions, may be safely employed. Scarring is rare but has been reported by one of the authors (WAH).
- Avoidance of sun exposure is important to prevent the development of new lesions.
- Congenital heart block may require a pacemaker.

Clinical Course

The cutaneous lesions of neonatal lupus typically resolve over a period of weeks to months, with nearly all manifestations gone by 6 months. We have observed rare cases of scarring. Third-degree congenital heart block, if present, is permanent, and up to 20% of infants so affected have a fatal outcome.

Fig. 16.15. Patient with characteristic raccoon facies of neonatal lupus erythematosus, with a distinct annulare edge without significant scale.

Fig. 16.16. Neonatal lupus erythematosus with scaly annular lesions extending on to the trunk. This patient also had a congenital heart block and hepatitis. (From the William Weston Collection, Aurora, CO.)

Fig. 16.17. Neonatal lupus erythematosus with scaly, crusted, annular lesions of the trunk in a neonate with cholestatic jaundice and thrombocytopenia. (From the William Weston Collection, Aurora, CO.)

Granuloma Annulare ICD10 code L92.0

Pathogenesis

Granuloma annulare (GA) is a granulomatous dermatitis of uncertain pathogenesis that leads to alteration or destruction of the collagen of the dermis, with increased mucin accumulation. The condition is usually associated with diabetes. Rarely patients may develop GA at sites of trauma (an octopus bite has done this!) or severe inflammation (herpes zoster). Familial clustering of GA suggests a genetic influence.

Clinical Features

- Most patients with GA are in the first 3 decades of life (age range, 3 months–88 years)
- GA is more common in women (F:M = 2.5 : 1)
- Lesions vary from one annular lesion to hundreds of lesions (disseminated or generalized GA).
- The fingers, hands, and feet are usually affected.
- Primary skin lesions are skin-colored to brownish (Fig. 16.18) to erythematous to violaceous (Fig. 16.19) smooth-topped papules, sometimes with an annular configuration.
- In some lesions, an annular ring may be incomplete (see Fig. 16.19).
- Scarring is not usually observed in the center of the lesion.
- Most patients are asymptomatic but some may be pruritic or even tender, especially lesions of the palms (Fig. 16.20). Palmoplantar lesions are more likely to have red and violaceous hues.
- Clinical variants include disseminated GA (≈5%–10% of cases), subcutaneous GA (see Chapter 15), photodistributed GA (Fig. 16.21), linear GA, and perforating GA, with umbilicated grouped papules with central crust or scale. Photodistributed GA may be difficult to differentiate from actinic granuloma, and some contend it is the same disease.

Diagnosis

- The history and appearance of the lesions are often so distinctive that the diagnosis may be rendered on clinical grounds.
- In occasional cases, a 3- or 4-mm punch biopsy is diagnostic.
- In patients with generalized GA, it is appropriate to consider screening to exclude diabetes mellitus.

Treatment

- No treatment is required because the condition is benign and typically asymptomatic.
- Potent topical corticosteroids are often used but are typically of minimal benefit.
- Corticosteroid-impregnated tape (e.g., Cordran tape) may be useful in select cases.
- Intralesional corticosteroids (e.g., triamcinolone, 1–5 mg/mL) is often a preferred treatment, with resolution expected in about 70% of lesions injected.
- Destructive liquid nitrogen cryotherapy is an option in small and superficial forms of the disease.
- Psoralen and ultraviolet A (PUVA) or narrow-band ultraviolet B (NB-UVB) can be used in severe generalized cases, although maintenance therapy is usually required. UVA penetrates the skin more deeply than UVB, and often PUVA yields a better response than NB-UVB.
- Other modalities that may be used in recalcitrant or extensive disease include hydroxychloroquine, potassium iodide, dapsone, cyclosporine, and chlorambucil.

Clinical Course

Approximately 50% of cases spontaneously clear within 2 years. About 40% of patients who do clear will experience one or more recurrences. Rare cases persist for decades or longer.

Fig. 16.18. Patient with typical yellow-brown annular lesion without scale or evidence of scarring in the center of the lesion. (From the William Weston Collection, Aurora, CO.)

Fig. 16.19. Side view of a larger lesion of granuloma annulare with brownish and violaceous hues.

Fig. 16.20. Patient with red to reddish-brown papular lesions, with only several of the lesions being annular. These lesions were painful with pressure.

Fig. 16.21. Patient with photosensitive granuloma annulare confined to sun-exposed areas of the back of the neck and V of the chest. This presentation can be difficult to differentiate from actinic granuloma.

Necrobiosis Lipoidica (Diabeticorum) ICD10 code L92.1

Pathogenesis

Necrobiosis lipoidica (NL) is a necrobiotic granulomatous process, with degeneration of collagen that affects the entire dermis and may extend into the subcutis. The pathophysiology of the disease is unknown, but about two-thirds of cases are associated with type 1 or 2 diabetes. Moreover, about 50% of the remaining one-third of patients has an abnormal glucose tolerance test. Some dermatologists refer to necrobiosis lipoidica as necrobiosis lipoidica diabeticorum (NLD) when evidence of diabetes is present. Although the disease is strongly associated with diabetes, NL is present in less than 1% of diabetics.

Clinical Features

- NL is most common in adults during the second, third, and fourth decades of life.
- Both genders may be affected, but NL is more common in women.
- The anterior pretibial surface is usually affected (Figs. 16.22 and 16.23), but rare cases may involve other areas of the body, including the face (Fig. 16.24) and scalp.
- Usually, NL on the extremities is bilateral but it may vary in degree.
- Early lesions begin as nondiagnostic red papules or plaques.
- Established lesions exist as annular plaques with red, red-brown, brown, or brown-yellow margins and central variable atrophy with telangiectasias.
- Ulceration is seen in about 25% of cases (Fig. 16.25).

Diagnosis

- The diagnosis of early NL may be difficult, but established lesions, particularly those in typical locations, like the pretibial surface, are clinically distinctive.
- A 4- to 6-mm punch biopsy from the active and erythematous edge, or even the center, is usually diagnostic. However, biopsy is often avoided, if possible, because such sites often heal poorly.
- Patients without a known medical history of diabetes should be evaluated for that disorder.

Treatment

- The role of diabetes management in NLD is controversial. Although some patients have reported improvement of NLD skin lesions with improved control of blood sugar levels, others have not seen such benefit.
- Cessation of smoking is helpful in some patients with NL (NLD).
- Although treatment of NL (NLD) is often difficult, early lesions can be improved with potent topical corticosteroids (with or without occlusion) and/or intralesional corticosteroids.
- Other treatment options include oral prednisone (with careful monitoring of the blood glucose level), mycophenolate mofetil, cyclosporine, clofazimine, and pentoxifylline.
- Severe and/or recalcitrant lesions, particularly those with ulceration, may be treated carefully with surgical excision to the fascia, followed by split-thickness skin grafts.
- Sometimes phototherapy, particularly UVA-1 therapy, may be used by specialty dermatologists.

Clinical Course

NL (NLD) is a chronic disease and, once atrophy has developed, it is permanent. Ulcers in NL (NLD) are notoriously difficult to heal. It is important to have realistic expectations regarding the appearance of the affected skin, even if the disease process can be arrested.

Fig. 16.22. Patient with characteristic pretibial, bilateral, annular plaques, with brown edges and yellowish brown centers. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 16.23. Close-up of annular lesions demonstrating reddish-brown annular edges and centers, with telangiectasia and yellowish hues. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 16.24. Early lesion of necrobiosis lipoidica diabeticorum on the face of a patient with juvenile diabetes. The lesion is only vaguely annular, with early central atrophy. This patient also had a similar lesion in her scalp.

Fig. 16.25. Patient with severe ulcerative necrobiosis lipoidica diabeticorum of the anterior pretibial area. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Leprosy (Hansen Disease) ICD10 codes A30.1 to A30.4

Pathogenesis

Leprosy is a cutaneous and peripheral nerve infection caused by the acid-fast bacillus *Mycobacterium leprae.* It is believed to be transmitted from person to person primarily via the respiratory route, although the disease may also be contracted by people in contact with the nine-banded armadillo, common in parts of Texas and Louisiana. In 2014, there were 175 new cases reported in the United States, with almost 75% of cases being from Arkansas, California, Florida, Hawaii, Louisiana, New York, and Texas. Annular lesions are usually seen in the tuberculoid and borderline (dimorphic) forms of leprosy.

Clinical Features

- Tuberculoid leprosy is comprised of only one or a few cutaneous lesions at most, whereas borderline leprosy usually presents with more numerous lesions.
- Tuberculoid leprosy usually manifests an asymmetric distribution; borderline leprosy is usually rather symmetric.
- Tuberculoid and borderline leprosy cause a varied number red or red-brown annular lesions (Figs. 16.26 to 16.28). Variable overlying scale may be present.
- The lesion(s) of tuberculoid leprosy tend to be larger than the more numerous lesions of borderline leprosy.
- Lesions of tuberculoid leprosy typically often have central diminished sensation, but borderline leprosy may or may not demonstrate such loss. Perception of temperature is often the first sensation affected.
- Nerve enlargement occurs within or adjacent to skin lesions in both forms of leprosy.

Diagnosis

- Clinical suspicion is important, particularly in patients who are from endemic areas.
- Cutaneous anesthesia may be demonstrated by using a wisp of cotton from a cotton swab; however, it is often sensation of temperature that is first affected.
- Because the lesions of leprosy are not clinically diagnostic, a 3- to 6-mm punch biopsy from the annular edge is often necessary to establish the diagnosis. The organism can be demonstrated with a Fite stain.

Treatment

- New patients with leprosy should be reported to the appropriate local/state health agency.
- The World Health Organization has recommended the following treatments for adults with leprosy:
  - Single-lesion tuberculoid disease—one-time dosing of rifampicin (600 mg), ofloxacin (400 mg), and minocycline (100 mg).
  - Paucibacillary disease (including tuberculoid leprosy with a few lesions)—dapsone (100 mg daily), rifampin (600 mg monthly) for 6 months.
  - Multibacillary disease (including borderline leprosy)—dapsone (100 mg daily), clofazimine (50 mg daily, 300 mg monthly), and rifampin (600 mg monthly) for 12 months.
- Some experts, including those at the National Hansen Disease (Leprosy) Program, in Louisiana, prefer to treat paucibacillary disease for 12 months and multibacillary disease for 24 months. Often, minocycline or clarithromycin may be added to regimens or substituted for other drugs.

Clinical Course

Tuberculoid leprosy often remains stable and may resolve without treatment, whereas borderline forms of leprosy are not stable and, over time, may move toward tuberculoid or lepromatous poles of disease.

Fig. 16.26. Patient with tuberculoid leprosy demonstrating an annular lesion with scale.

Fig. 16.27. Patient with borderline leprosy demonstrating two red annular lesions of the buttock. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 16.28. Patient with borderline leprosy. Shown are large red annular lesions of the upper thigh in a patient who emigrated from Thailand. A biopsy site from a smaller nonannular red plaque is also shown. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Erythema Multiforme ICD10 code L51

Pathogenesis

Erythema multiforme (EM) is a mucocutaneous hypersensitivity reaction, with many precipitating causes, including infections (herpes simplex infection being most common), medications, and connective tissue disorders. In some cases, the precipitating event cannot be identified. Classically, EM has been divided into EM minor, which is a milder form of the disease, often associated with herpes simplex virus (HSV) infection, and EM major, which is usually associated with medications and is used synonymously with Stevens-Johnson syndrome (see Chapter 11).

Clinical Features

- EM usually affects distal acral skin, with the dorsal hands being the most often affected sites. The most common mucosal sites involved are the oral mucosa and genitalia.
- The primary lesion is a round macule that quickly develops one or more concentric zones of color change. EM lesions may have two zones of color and appear annular or may develop three zones of color, yielding the classic targetoid lesion (Fig. 16.29 and 16.30).
- Lesion size is variable, and some may be as small as 2 to 3 mm and some larger than 5 cm.
- One or more EM lesions may develop a central blister (see Chapter 11).
- Oral lesions usually present as ulcerations (Fig. 16.31).
- An isomorphic response may be present, with lesions developing at sites of sunburn (Fig. 16.32), trauma, or pressure.
- The lesions may be asymptomatic or may demonstrate mild burning and/or pruritus.

Diagnosis

- The diagnosis can usually be made on clinical grounds based on the appearance and distribution of the lesions, especially if there is an identifiable precipitating event, such as HSV infection.
- A 3- or 4-mm punch biopsy from an early lesion can be done to confirm the diagnosis if the case is unclear. Histologic findings, although not pathognomonic, usually strongly support the diagnosis.

Treatment

- Treat the infection (HSV, *Mycoplasma*) or withdraw suspected drugs.
- Because most cases are self-limited, mild disease may be treated with only supportive therapy or topical corticosteroids.
- For patients with recurrent EM minor, suppressive HSV treatment, with acyclovir, 400 mg bid for 4 to 12 months, is recommended, even if HSV cannot be firmly identified as a cause.
- Alternate therapies used for significant recurrent disease include oral corticosteroids, dapsone, hydroxychloroquine, azathioprine, and cyclosporine.

Clinical Course

Individual outbreaks of EM minor usually last 3 to 6 weeks, with some patients having postinflammatory hyperpigmentation at the sites of involvement. A subset of patients will have recurrent episodes of erythema multiforme, with many of these cases being attributable to recurrent HSV infections, even if subclinical in nature or unrecognized by the patient.

Fig. 16.29. Patient with classic targetoid lesions of erythema marginatum secondary to hydrochlorothiazide. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 16.30. Dramatic example of erythema marginatum of the palms secondary to herpes simplex infection. Some of the lesions are bullous.

Fig. 16.31. Patient with resolving herpes labialis of the lower lip associated with oral erosive erythema marginatum. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 16.32. Patient with photosensitive erythema marginatum, with both classic targetoid lesions and unusually large annular lesions demonstrating confluence. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 17
Linear and Serpiginous Lesions

Epidermal Nevus Syndrome
Nevus unius lateralis
Systemized epidermal nevus

Linear and serpiginous presentations of skin disease represent distinctive patterns that are so unique that a diagnosis can often be made without a biopsy or any further testing. In this short chapter, not all linear diseases may be discussed because many rare congenital disorders may present with linear configurations but would be beyond the scope of this practical discourse. It is also important to note that linear and serpiginous patterns should not be confused with sporotrichoid patterns of infection, which appear linear due to lymphatic spread. The sporotrichoid pattern is covered in Chapter 18.

IMPORTANT HISTORY QUESTIONS

Were the lesions present at birth or shortly after birth?

This is an important question because many linear conditions are congenital in nature and were present in the neonatal period (e.g., linear epidermal nevus, incontinentia pigmenti).

Is there a family history of a similar lesion?

In the appropriate clinical circumstances, an affirmative answer would support the diagnosis of incontinentia pigmenti, an X-linked dominant genetic disorder. However, it is important to note that a negative response does not exclude incontinentia pigmenti because spontaneous mutations are common.

How long have the lesions been present?

Some lesions persist for life (e.g., linear epidermal nevus), whereas others have a finite duration (e.g., lichen striatus).

What medications do you take?

This is an important question in patients for whom linear bleomycin-induced erythema or hyperpigmentation is suspected.

Is there a history of recent travel?

This question is designed to include or exclude cutaneous larva migrans. This condition is especially prevalent in the southeast United States and in other subtropical or tropical climates.

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the lesions?

A distribution that follows the lines of Blaschko supports assessment of a linear epidermal nevus or other epithelial hamartoma, whereas cutaneous larva migrans is more common on acral skin.

What color are the lesions?

Linear epidermal nevi are often yellow-brown or brown, flagellate erythema due to bleomycin or cutaneous larva migrans is erythematous, and linear morphea may be white or yellow-white.

Do any lesions demonstrate vesicles or blisters?

Vesiculobullous lesions may be seen in incontinentia pigmenti or cutaneous larva migrans. Although not discussed in this chapter, allergic contact dermatitis may also demonstrate linear vesiculobullous lesions.

Does the lesion demonstrate induration on palpation?

Linear morphea is characterized by marked induration due to thickening of the collagen.

What Are the Lines of Blaschko?
There is no easy answer because the lines of Blaschko do not conform to any known anatomic features. Instead, the lines of Blaschko are somewhat circularly defined as lines that congenital linear abnormalities follow. It has been suggested that the lines are due to cutaneous mosaicism of different clones of cells.

Pathogenesis

Lichen striatus is an uncommon, self-limited dermatosis, of unknown cause; it affects mostly children. Some studies have suggested a more frequent personal or familial atopic diathesis in affected patients.

Clinical Features

- Some studies have reported a slight female preponderance, whereas others studies have reported that both genders are equally affected.
- Most cases occur in preschool children, with a mean age of 3 years, but the condition can also occur in adolescents and young adults as well.
- A unilateral (and rarely bilateral) eruption affects the lower limbs (one-third of cases), followed by the upper limbs, trunk and, rarely, the face (~10%).
- The eruption begins as discrete skin-colored, pink, or red papules (Fig. 17.1), with variable overlying scale. In darker skin types, the condition may appear hyperpigmented (Fig. 17.2) or hypopigmented.
- Less often, the condition may resemble lichen planus or psoriasis.
- Lesion are grouped as continuous or discontinuous lines that generally follow the lines of Blaschko (see box), with some cases manifesting more than one parallel line of involvement (Fig. 17.3).
- Typically, the condition is asymptomatic, but it may be pruritic in about 10% of cases.
- Rare patients may demonstrate extension to a contiguous fingernail or toenail, with onychodystrophy manifesting as thinning, splitting, longitudinal ridging, or onycholysis (Fig. 17.4).

Diagnosis

- The history and clinical appearance are usually diagnostic.
- A skin biopsy is not usually required, but, if the presentation is atypical, a biopsy may be performed. The histologic findings will support the diagnosis, but exclusive pathognomonic findings do not exist.

Treatment

- Reassurance is usually all that is necessary because the condition is self-limited and typically disappears in weeks or months (rarely years), without permanent sequelae.
- Weak to midstrength topical steroids may be used for pruritus.

Clinical Course

The mean duration of disease is 6 to 9 months; however, rare patients may have lesions for up to 3 years. Hypopigmentation may persist for months, even after the lesion resolves. Rare patients may suffer a relapse or even multiple relapses.

Fig. 17.1. Patient with early lesions of lichen striatus composed of red linear papules. (From the William Weston Collection, Aurora, CO.)

Fig. 17.2. Patient with linear lesions of lichen striatus on the upper thigh demonstrating subtle hyperpigmentation.

Fig. 17.3. Patient with hypopigmented lichen striatus with two parallel linear lesions following the lines of Blaschko.

Fig. 17.4. Patient with unusually indurated red linear papules, with associated nail dystrophy. (From the William Weston Collection, Aurora, CO.)

Bleomycin-Induced Flagellate Erythema and Hyperpigmentation

ICD10 code Y43.1

DRUG-INDUCED

Pathogenesis

Bleomycin is a chemotherapeutic agent that produces a distinct skin eruption with linear erythema that transitions into linear hyperpigmentation. It is most commonly seen at higher cumulative doses, usually in the range of 90 to 285 mg; however, some patients may develop this reaction with the first dose. There is no clear consensus as to how often this adverse reaction transpires, with a reported range in the literature of 6% to 66% of patients who have received the drug. The mechanism whereby the linear lesions are produced is uncertain, but it has been postulated that it is related to scratching because affected patients report pruritus. Attempts to induce lesions with superficial trauma have not always been successful.

Clinical Features

- Lesions usually develop within hours to weeks after taking bleomycin.
- Primary lesions present as linear erythema, with pruritus (Fig. 17.5).
- The lesions transition, usually over days or weeks, into linear hyperpigmented lesions, with some patients having transitional lesions that may appear violaceous (Figs. 17.6 and 17.7).
- Some lesions may demonstrate variable scale.
- Other less distinctive lesions may include erythema over pressure points, which can also transition into hyperpigmentation, hyperpigmentation of palmar and flexural creases, and hyperpigmentation of striae distensae (stretch marks).

Diagnosis

- Early lesions may be difficult to differentiate from dermatographism, but dermatographism usually resolves within hours, whereas the flagellate erythema of bleomycin persists for an extended duration.
- The presence of linear erythema with pruritus and/or hyperpigmentation in a patient receiving bleomycin is a drug eruption, unless proven otherwise.
- Biopsy typically reveals nonspecific findings and is usually not needed to establish the diagnosis.

Treatment

- The pruritus can be managed with an antihistamine and/or medium-potency topical corticosteroid, such as triamcinolone. Sedating antihistamines, such as diphenhydramine, are useful at bedtime.
- No treatment is reasonable if the patient is comfortable and unconcerned.

Clinical Course

This condition represents a self-limited drug reaction. Although the erythema subsides within days, the hyperpigmentation may persist for weeks or months before gradually fading.

Fig. 17.5. Patient with characteristic flagellate areas of a pruritic erythema produced by bleomycin.

Fig. 17.6. Patient with intermediate lesions induced by bleomycin, with variable erythema, hyperpigmentation, and a focally violaceous hue.

Fig. 17.7. Patient with typical flagellate hyperpigmentation weeks after receiving bleomycin. Note that there is also focal subtle scaling.

Linear Epidermal Nevus ICD10 code Q82.3

Epidermal Nevus Syndrome

Epidermal nevus syndrome consists of an epidermal nevus (usually extensive), with associated skeletal, neurologic, ocular, and cardiac abnormalities. Central nervous system abnormalities are more common when the epidermal nevus involves the head and neck.

Linear Malformations of Childhood: Differential Diagnosis

- Goltz syndrome
- Linear adnexal tumors
- Linear Darier disease
- Linear epidermal nevus
- Linear porokeratosis
- Nevus comedonicus
- Nevus sebaceus

Pathogenesis

Linear epidermal nevus (epidermal nevus) is a localized genetic disorder (OMIM 162900) that is characterized as a localized overgrowth of epithelium in a pattern that follows the lines of Blaschko. About one-third of those with epidermal nevi have *FGFR3* mutations that are also found in some seborrheic keratoses.

Clinical Features

- Epidermal nevi are usually present at birth or shortly after birth, but rare cases may present in early adulthood.
- The lesions may involve any part of the skin.
- Once a lesion develops, it may gradually enlarge over years.
- The primary lesion is a yellow-brown to brown aggregate of papules, with variable scale and verrucous features that follow the lines of Blaschko. So-called skip areas are often present (Figs. 17.8 and 17.9).
- Single or multiple lesions may be present. Sometimes, the process involves half of the body (nevus unius lateralis; Fig. 17.10) or nearly the entire body (systemized epidermal nevus).
- Rare cases may involve the oral mucosa (Fig. 17.11).

Diagnosis

- In most cases, the clinical presentation is diagnostic. Other congenital linear malformations can be in the clinical differential diagnosis but are not covered in this text (see box).
- In problematic cases, the lesion may be biopsied with a 3- to 6-mm punch biopsy. Shave biopsies are not adequate to differentiate epidermal nevi from some of the other clinical possibilities listed in the box.

Treatment

- Because the condition is benign, treatment is not required.
- Surgical excision is a consideration for select lesions. However, the cost, complications, and cosmetic appearance of the scar must be considered.
- Laser ablation is a therapeutic option in some cases.
- Topical therapies that may improve the clinical appearance include ammonium lactate, 12%; calcipotriene ointment or cream, 0.005%; and tazarotene cream, 0.1%.

Clinical Course

Linear epidermal nevi may remain stable or may enlarge gradually, over a period of years or decades.

Fig. 17.8. Subtle light brown linear epidermal nevus in a young child that follows the lines of Blaschko.

Fig. 17.9. Yellow-brown linear epidermal nevus in a woman. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 17.10. Extensive dark brown papillomatous epidermal nevus involving half of the body in a child. This variant is often termed *nevus unius lateralis.*

Fig. 17.11. Close-up of a patient with a markedly papillomatous linear epidermal nevus of the tongue.

Linear Morphea ICD10 code L94.0

Pathogenesis

Morphea, also known as localized scleroderma, is a disorder characterized by thickening of the collagen in the dermis and, to a lesser degree, in the subcutaneous tissue and rarely into the fascia. The pathogenesis is not understood; however, there is evidence to support that this is a limited form of an autoimmune connective tissue disease. Some cases in Europe have been associated with infection by *Borrelia* spp. There are several clinical presentations of morphea, including linear presentations that are discussed here. Linear presentations account for about 50% or more of childhood cases and 15% of adult cases. Some cases of linear morphea may demonstrate clinical and histologic features of overlying lichen sclerosus et atrophicus (LS&A); the relationship between these two disorders is not clear.

Clinical Features

- Studies have reported a modest female preponderance in morphea, with most cases occurring in children, adolescents, and young adults, although persons of any age may be affected.
- Lesions are usually linear, solitary, and unilateral, but multiple lesions can occur (Figs. 17.12–17.14).
- Lesions are usually asymptomatic, but some patients may manifest pruritus, or even pain or discomfort, particularly in lesions that cross joint spaces.
- The primary lesion is usually a skin-colored to violaceous area of induration. Many lesions demonstrate a violaceous color at the periphery.
- As lesions evolve, the color may vary from violaceous to hyperpigmented to white or yellow-white. Often, more than one color may be present in the same lesion.
- Established lesions can manifest epidermal atrophy and may be shiny, with fine wrinkling.
- Lesions that cross a joint may impair function and produce contractures (see Fig. 17.14).

Diagnosis

- The diagnosis is usually established on clinical grounds, based on the presence of a linear lesion with marked induration on palpation. White lesions may be difficult to differentiate from LS&A.
- In problematic cases, a 4- to 6-mm punch or incisional biopsy, which includes subcutaneous tissue, will generally be diagnostic, as long as the clinical suspicion of morphea is communicated to the pathologist or dermatopathologist.
- Laboratory tests that may be helpful include a complete blood count (CBC; often a peripheral eosinophilia may be present) and a screening antinuclear antibody (ANA) test, positive in a low titer in about 50% of cases.

Treatment

- The treatment used is dependent on the patient's age, site and extent of involvement, and degree of any functional impairment (e.g., involvement over joints).
- Small or limited lesions without any functional impairment are best treated with topical calcipotriene, 0.005% ointment, bid for 2 to 4 months, with or without occlusion, or tacrolimus, 0.1% bid for 2 to 4 months, with or without occlusion.
- Larger lesions or lesions with functional impairment are best treated with phototherapy (narrow-band ultraviolet B [UVB] or UVA-1), systemic corticosteroids, or methotrexate.

Clinical Course

The clinical course in any individual patient may not be predicted reliably, but about 50% of patients will demonstrate spontaneous remission within 5 years.

Fig. 17.12. Linear morphea of the back of the neck, with white lichen sclerosus et atrophicus–like hypopigmentation.

Fig. 17.13. Patient with hyperpigmentation and hypopigmentation in linear morphea of the upper thigh and lower leg. (From the William Weston Collection, Aurora, CO.)

Fig. 17.14. Patient with end-stage linear morphea, with shiny epidermal atrophy that has produced a contracture across the hand. (From the Joanna Burch Collection, Aurora, CO.)

Cutaneous Larva Migrans ICD10 code B76.9

Pathogenesis

Cutaneous larva migrans is a so-called creeping eruption that occurs when human skin comes into contact with soil containing viable larva of animal hookworms. *Ancylostoma braziliense* (the cat and dog hookworm) accounts for 95% of cases. In the United States, the highest incidence is seen in Florida and Georgia, where humans have frequent contact with moist sandy soil. Sandboxes are notorious sites of contact for young children, and beaches are common locations for contact for children and adults. The disease is also an occupational hazard for individuals who crawl under houses (e.g., plumbers). The disease is limited to the skin because the larval worms do not have the proper collagenase enzymes to penetrate into the deeper zones of human skin.

Clinical Features

- Common sites of involvement include the dorsal feet and interdigital spaces between the toes.
- A pruritic papule or dermatitis develops at the site of penetration within one hour.
- After a few days or weeks, a linear, serpiginous, slightly indurated, erythematous tract develops as the larva migrates. Usually, the tract is 2 to 4 mm wide, with some lesions being bullous (Figs. 17.15–17.18). The number of burrows may vary from 1 to a record of 2100 burrows in one patient.
- Rarely, larvae may track down a hair follicle and produce follicular lesions.
- Larvae migrate several millimeters a day. Larvae are 1 to 2 cm ahead of the perceptible end of the lesion.
- Additional manifestations include peripheral eosinophilia and, rarely, Loeffler syndrome.
- In rare cases, a secondary bacterial infection, including streptococcal cellulitis, may develop.

Diagnosis

- The clinical appearance and migratory nature of the burrow (creeping) is distinctive, facilitating diagnosis.
- Biopsy of a burrow demonstrates an eosinophilic infiltrate and a burrow just above the basement membrane zone, but larva are rarely seen on biopsy.

Treatment

- Treatment of choice for limited disease is the application of 10% to 15% liquid thiabendazole suspension or 10% to 15% topical thiabendazole cream (prepared by a compounding pharmacy), applied qid for 1 week (98% success rate in one study).
- In patients with extensive lesions or lesions on the thick skin of the sole, and/or who have failed topical therapy, oral ivermectin is the treatment of choice. Cure rates have varied from 77% to 100% with a single 12-mg oral dose. Other studies have used 200 mg/kg for 3 to 7 days.
- Other oral treatment options include albendazole (400 mg qd in a 1-, 3-, or 5-day regimen) and thiabendazole (50 mg/kg per day in a single dose for 2–4 days), with a 99% cure rate in one study. Thiabendazole, although highly effective, is less well tolerated than ivermectin or albendazole and should be utilized only when the other options are not available.
- Older references have indicated liquid nitrogen cryotherapy as a treatment, to be applied to the advancing edge of the burrow, but because the organism is always present before the visible body reaction, this therapy has a high failure rate, and we do not recommend its use.

Clinical Course

The disease is self-limited, and most larvae die within 2 to 8 weeks—81% of all larvae are dead at 4 weeks. Rare larvae may persist up to 1 year or longer.

Fig. 17.15. Patient with linear larval burrow on the toe and top of the foot. Note the linear blister at the leading edge. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 17.16. Patient with convoluted linear burrows on the bottom of the foot. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 17.17. Child with numerous older burrows present for 4 weeks that had been treated as a dermatitis by both the emergency room clinician and her pediatrician. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 17.18. Patient with atypical bullous lesion on the instep of the foot. Careful observation of the lesion demonstrates the serpiginous burrow within the blister.

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Chapter 18
Sporotrichoid Disorders

Sporotrichoid disorders, sometime also termed *nodular lymphangitis,* are defined as nodular abscesses that spread along lymphatics, away from a primary inoculation site. Streaking erythema, along lymphatics, may or may not be present. As the name implies, sporotrichosis is a fungal infection that serves as the prototype for the sporotrichoid presentation pattern.

IMPORTANT HISTORY QUESTIONS

Have you had any recent injuries to your skin?

This is an important question because most sporotrichoid infections of the skin are associated with cutaneous inoculation injury. The classic (overrated) question is "Have you been working in a rose garden?" However, although rose gardening is a potential source of exposure for sporotrichosis, it is not the only way to acquire the infection.

Do you own cats, or have you been exposed to cats?

Cats are the animals most often infected with sporotrichosis, and the scratch of an infected cat can lead to infection. Veterinarians are at particular risk of this infection.

Have you had any fever or chills?

This is an attempt to gauge if there is any evidence of systemic infection.

Do you have any other medical problems?

This question can reveal important clinical information including whether the patient is immunocompromised.

Have you traveled outside of the United States?

Sporotrichosis and atypical mycobacterial infections are ubiquitous in the United States; nocardiosis is common in Mexico. Leishmaniasis requires travel to an endemic area for infection to develop.

Have you had a recent pedicure?

This is an important question if the patient has a suspected infection on the lower extremities, because pedicures represent an important source of mycobacterial infection.

Differential Diagnosis of Sporotrichoid Reactions

Common

- Sporotrichosis
- Atypical mycobacterial infection

Uncommon

- Anthrax
- Nocardiosis
- Leishmaniasis
- Mycetoma
- Staphylococcal abscesses
- Tuberculosis
- Tularemia

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the lesions?

Sporotrichoid infections are unilateral, unless disseminated, and follow a single lymphatic drainage basin. There are only rare exceptions to this rule, with the most common being atypical mycobacterial infections due to pedicures, in which bilateral exposure to contaminated water leads to bilateral infection.

Does there appear to be a lesion that represents a primary point of trauma?

The location of the primary lesion may suggest a potential diagnosis. Lesions on the hand are usually associated with gardening, which favors sporotrichosis. Lesions on the leg, especially in those who get pedicures, suggest a potential atypical mycobacterial infection. Such observations are useful in guiding empiric therapy while awaiting biopsy or culture results.

Are there any lesions outside of the lymphatic drainage basin?

Patients with sporotrichoid skin lesions may suffer dissemination, potentially with life-threatening systemic disease. Dissemination requires aggressive therapy, possibly with hospital admission and consultation with infectious disease specialists.

Sporotrichosis ICD10 code B42.1

Pathogenesis

Sporotrichosis is due to a localized infection of the skin by the dimorphic fungus *Sporothrix schenckii*, a ubiquitous saprophytic fungus found in decaying vegetation (e.g., hay, sphagnum peat moss, wood, soil). The organism is found nearly worldwide, in temperate, subtropical, and tropical environs. The fungus is usually introduced into the skin via local injury, such as a thorn prick—hence, the classic question as to whether the patient works in a rose garden. Although many animal species can be infected, cats are notoriously susceptible and may infect humans directly by scratching. Although most sporotrichosis produces a sporotrichoid clinical pattern of infection (~80% of cases), fixed cutaneous infection (10%–15% of cases), disseminated infection, and pulmonary infection can also occur.

Clinical Presentation

- The initial lesion, usually found on extremities, especially the hand, is a tender erythematous papule that usually appears 1 to 3 weeks after the injury.
- The inoculation site often erodes or ulcerates or, more rarely, becomes verrucous or ulcerated.
- Secondary lesions consisting of erythematous nodules or abscesses appear along ascending lymphatics (nodular lymphangitis) en route to regional lymph nodes (Figs. 18.1–18.3).
- The secondary lesions may have no epidermal changes, may ulcerate or, even more rarely, demonstrate verrucous changes.
- Variable lymphadenopathy in the regional lymph nodes is present.

Diagnosis

- A sporotrichoid pattern of infection is suggestive of sporotrichosis; however, this pattern is mimicked by atypical mycobacterial infections and, less commonly, by other infections.
- An incisional biopsy or punch biopsy (4 mm at a minimum, preferably 6 mm), bisected, with half being sent for H&E and special staining and half being sent for fungal and acid-fast bacterial cultures, is useful in establishing the diagnosis.

Treatment

- Oral itraconazole (200–400 mg qd for adults) or 3 to 6 mg/kg per day for children), for 3 to 4 months, is the treatment of choice based on efficacy, tolerability, and ease of administration. Some patients may require up to 6 months of therapy.
- Oral terbinafine (500 mg bid) for 3 to 4 months is an alternative treatment.
- Supersaturated potassium iodide (SSKI) has been commonly used, with the primary advantage of affordability. However, administration is inconvenient, and many patients experience side effects. It is typical to begin with five drops SSKI, in orange juice, tid, with increases in the numbers of drops every 1 to 3 days, until a dose of 10 to 20 drops tid is achieved. This treatment should *not* be used in those with thyroid disease.
- Because the organism is heat sensitive, and it sustains irreversible damage at temperatures in excess of 42C (107.6 F), topical heat therapy is sometimes employed. Patients can be treated with hot baths or heating pads in those rare circumstances (e.g., pregnancy) for which oral therapy is not an option.

Clinical Course

Most cases of fixed and lymphocutaneous sporotrichosis will resolve spontaneously, even without treatment, but this can take many months. Also, untreated cutaneous sporotrichosis is always at risk to disseminate, particularly if clinical circumstances lead to diminished immunity.

Fig. 18.1. Patient with classic sporotrichosis demonstrating lymphatic abscesses and lymphangitis. The inoculation site on the hand is not visible. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 18.2. Primary inoculation site on the elbow associated with sporotrichoid lesions of the inner arm. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 18.3. Patient with primary arcuate lesion below the eye from a cat scratch and lymphocutaneous spread to the preauricular lymph node, which was enlarged.

Sporotrichoid Mycobacterial Infections ICD10 code A31.1

Pathogenesis

Sporotrichoid mycobacterial infections are due to local inoculation of an atypical mycobacterial species into the skin. This produces an inoculation chancre, followed by the development of linear nodules, abscesses, or ulcerations that follow the local lymphatic vessels. Mycobacterial furunculosis, the other common clinical presentation of mycobacterial infection, is discussed in Chapter 13. *Mycobacterium marinum* is most often implicated, but *Mycobacterium chelonae* and *Mycobacterium kansasii* can also produce sporotrichoid lesions.

Clinical Presentation

- Some patients with mycobacterial skin infections may report an injury following water exposure, such as hand trauma while cleaning a fish tank, handling fish, or having a pedicure with a foot bath.
- These infections are usually located on an extremity.
- The primary inoculation chancre appears first and consists of an erythematous nodule, with variable scale, fluctuation, or ulceration. In some cases, there may be more than one inoculation site.
- Secondary sporotrichoid nodules appear later as one or more erythematous or suppurated nodules along the ascending lymphatic drainage (Figs. 18.4 and 18.5). Secondary nodules may also ulcerate.
- Regional lymphadenopathy is variably present.

Diagnosis

- The clinical presentation of sporotrichoid spread along the lymphatic drainage suggests an infectious process, with the two most common causes being sporotrichosis and atypical acid-fast infection.
- Although certain exposures may favor a particular diagnosis, the lesions cannot be distinguished on clinical features alone, and a biopsy is required.
- A punch, incisional, or excisional biopsy should be performed in all cases. If a punch biopsy is used, it should be 4 mm or larger.
- Half of the bisected specimen should be sent for routine histologic examination, but it is important to understand that even with special stains, findings organisms can be difficult. The organisms can be identified in tissue in about 50% of biopsies.
- Therefore, the other half of the bisected specimen should be sent for bacterial and fungal culture. It should be made clear that mycobacterial culture is desired because this requires special media, and many of the species are slow growing.

Treatment

- The treatment of cutaneous mycobacterial infections is not standardized. If the biopsy detects a mycobacterial organism by special stains, oral minocycline (100 mg bid) is a reasonable empiric therapy while awaiting culture and sensitivity results.
- Once the sensitivities are known, drugs that may be used in addition to minocycline include rifampin, clarithromycin, azithromycin, ciprofloxacin, and co-trimoxazole (trimethoprim-sulfamethoxazole [TMP-SMX]), usually for 2 to 4 months. Occasional unresponsive cases may require multidrug therapy.

Clinical Course

Most cases spontaneously resolve without therapy over 2 to 6 months; most treated cases respond more quickly. Rare cases result in disseminated infection.

Fig. 18.4. Patient with sporotrichoid mycobacterial infection due to *Mycobacterium chelonae*. Note that the lesions appear to follow more than one lymphatic vessel. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 18.5. Sporotrichoid mycobacterial infection due to *Mycobacterium marinum*. The primary lesion is on the knuckle, with nodular lymphangitis developing after the primary care provider injected the primary lesion with intralesional triamcinolone to treat a presumed foreign body granuloma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 19
Photosensitive Disorders

Key Terms

Polymorphous Light Eruption
  Polymorphic light eruption
Systemic Lupus Erythematosus
  Bullous systemic lupus erythematosus
  Discoid lupus erythematosus
  Lupus hair
Discoid Lupus Erythematosus
  Chronic cutaneous lupus erythematosus
  Hypertrophic discoid lupus erythematosus
Dermatomyositis
  Amyopathic dermatomyositis

It is important to recognize photosensitive disorders because many of these conditions may be ameliorated, or prevented entirely, by sun avoidance and/or withdrawal of a photosensitizing medication. Also, this dermatologic pattern includes some forms of connective tissue disease that may have systemic consequences, including end-organ damage and even death.

Differential Diagnosis of Photosensitive Disorders

- Actinic prurigo
- Chronic actinic dermatitis
- Dermatomyositis
- Erythropoietic protoporphyria
- Lupus erythematosus
- Pellagra
- Photoallergic contact dermatitis
- Photoallergic drug eruptions
- Phototoxic drug eruptions
- Phototoxic contact dermatitis
- Polymorphous light eruption
- Porphyria cutanea tarda
- Solar urticaria
- Sunburn

IMPORTANT HISTORY QUESTIONS

How long have you had a photoaggravated skin condition?

Some photosensitive disorders are acute, such as photoallergic contact dermatitis or photoinduced drug eruptions, whereas other conditions are chronic, such as erythropoietic protoporphyria or pellagra.

Do your lesions itch or burn?

Many photosensitive processes, such as actinic prurigo, chronic actinic dermatitis, and photoinduced drug eruptions, produce pruritus, whereas others may cause pain, such as erythropoietic protoporphyria, phototoxic drug eruptions, and sunburn.

Have you recently started any new medications?

This question is important when considering photoallergic and phototoxic drug eruptions. It could also be important when investigating drug-induced lupus erythematosus or drug-induced dermatomyositis.

Do you have any other symptoms or recent problems such as muscle pain, joint pain, fever, or other unexplained problems?

This question may reveal overt systemic symptoms, but more in-depth questioning and a complete review of symptoms may be necessary when connective tissue disorders, including lupus erythematosus and dermatomyositis, are specific considerations.

Is there a family history of a similar rash?

Some photodistributed conditions may have a hereditary component, such as actinic prurigo, erythropoietic protoporphyria, and polymorphous light eruption.

IMPORTANT PHYSICAL FINDINGS

Is there any evidence of hair loss?

Systemic lupus erythematosus may be associated with a nonscarring hair loss (so-called lupus hair); discoid lupus erythematosus may demonstrate a scarring alopecia, with characteristic dyspigmented plaques.

What is the distribution of the lesions?

Some disorders manifest a characteristic distribution. For example, systemic lupus erythematosus on the hands usually involves the interphalangeal skin (between joints), whereas dermatomyositis usually involves the skin over the joint spaces (as Gottron papules).

Is a mucosal surface involved?

Although most photosensitive disorders do not have mucosal involvement, discoid lupus, systemic lupus erythematosus, and actinic prurigo are notable exceptions, and all may have oral manifestations.

Does the patient have periungual telangiectasias?

Periungual telangiectasias may be seen in dermatomyositis and systemic lupus erythematosus.

Polymorphous Light Eruption ICD10 code L56.4

GENETIC DISORDER

Introduction

Polymorphous light eruption (PMLE), also known as a polymorphic light eruption, is the most common photodermatosis, with some studies having shown an incidence that approaches 10% of the population in certain ethnic groups. Familial clustering and a higher incidence in some ethnic groups suggest a genetic predisposition, although the precise pathogenesis is not well understood. It is thought that PMLE represents a form of a delayed-type hypersensitivity process (type IV). PMLE may be precipitated by ultraviolet A (UVA) light (most common), UVB light (Fig. 19.1), or both, depending on the patient.

Clinical Features

- PMLE is more common in women, and it generally presents in the first 3 decades of life.
- Patients with PMLE usually develop a photoexposed eruption in the early spring, with fewer lesions later in the summer (due to hardening) or in the fall, when the UV light intensity wanes.
- The threshold of exposure necessary for the development of lesions may vary from 5 minutes to 3 hours.
- The delay between UV light exposure to the development of lesions is highly variable (30 minutes to 3 days).
- The morphology of PMLE varies widely (hence the term polymorphous) and includes macular erythema (Fig. 19.2), erythematous papules and plaques (Figs. 19.3 and 19.4), and papulovesicles with a dermatitic appearance (Fig. 19.5). In some cases, the lesions may resemble urticaria or erythema multiforme.
- Pruritus is common.

Clinical Diagnosis

- Clinical circumstances, including an affirmative family history, or appropriate ethnic background, may suggest the diagnosis.
- A 3- or 4-mm punch biopsy may be supportive, but the histologic changes are not always diagnostic of only PMLE.
- Screening laboratory studies to consider include antinuclear antibody (ANA) or extractable nuclear antigen antibody (ENA) testing and determination of urine or stool porphyrin levels to exclude porphyria.
- Rare cases may require phototesting (see Fig. 19.1).

Treatment

- Artificial light exposure can be used to harden an individual and decrease observed disease. Narrow-band UVB (NB-UVB) is the preferred modality, followed by PUVA (psoralen plus UVA). Broadband UVB is less effective.
- Oral hydroxychloroquine (200–400 mg qd) is effective for many patients.
- Oral β-carotene (25–50 mg tid) is effective for some patients.
- Oral nicotinamide (1 g tid) induced complete remission in 14 of 25 patients and improved the course of disease in the remaining 11 patients.
- Topical corticosteroids may be helpful, with the strength of the corticosteroid varied according to the amount of disease that is present and the skin affected.
- Sun avoidance behaviors, sun-blocking clothing, and broad-spectrum sunscreens (with UVA and UVB protection) are important strategies to minimize disease activity.

Clinical Course

Lesions of PMLE typically last for 1 to 3 weeks and heal without scarring. The disorder may persist for decades, but the condition usually remits later in life.

Fig. 19.1. Phototest with red plaques being produced in as little as 2 seconds of UVB exposure.

Fig. 19.2. Young lady with macular erythema of the cheeks, nose, and chin that resemble the malar rash of systemic lupus erythematosus. (From the William Weston Collection, Aurora, CO.)

Fig. 19.3. Young child with red indurated plaques confined to the sun-exposed portions of the arm. (From the William Weston Collection, Aurora, CO.)

Fig. 19.4. Polymorphous light eruption presenting as plaques of the cheek in a young man. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 19.5. Crusted dermatitic presentation of polymorphous light eruption in a child. (From the William Weston Collection, Aurora, CO.)

Photoallergic Drug Eruption ICD10 code L56.1

Commonly Implicated Drugs in Photoallergic Drug Eruptions

- Celecoxib
- Dapsone
- Furosemide
- Hydrochlorothiazide (very common)
- Hydroxychloroquine
- Pyridoxine hydrochloride (vitamin B_6)
- Trimethoprim-sulfamethoxazole (TMP-SMX)
- St. John's wort

Pathogenesis

Photoallergic drug eruptions are eczematoid tissue reactions that occur after the ingestion of a medication, vitamin, supplement, or even a preservative in food, but the condition requires light exposure for the reaction to transpire. Photoallergic drug reactions can be induced by UVA (most common) or UVB light. Many texts have combined photoallergic and phototoxic drug eruptions into one category of photosensitive drug eruptions, but the processes are distinct, and a separate discussion is warranted.

Clinical Features

- With prior sensitization, photoallergic reactions usually occur 1 day after re-exposure. A new exposure may take up to 3 weeks to foment as a photoallergy.
- The condition causes a photodistributed dermatitis that usually involves the face, posterior neck, upper chest, arms, and hands. There is usually sparing beneath the chin, in a natural shadow area.
- The condition can spread somewhat to non–sun-exposed areas as UV light penetrates clothing.
- Primary lesions vary from macular erythema to indurated eczematous plaques or even, on occasion, vesiculobullous reactions (Figs. 19.6–19.8).
- In contrast to phototoxic drug eruptions, which produce discomfort or pain similar to that of a sunburn, photoallergic drug eruptions are usually pruritic.

Clinical Diagnosis

- A pruritic dermatitis, in a photodistributed or photoaccentuated pattern, and occurring in a patient taking medication(s) or a suspicious exogenous agents, raises concern for a photoallergic drug eruption.
- In some cases, it is difficult to distinguish a photoallergic drug eruption from a contact dermatitis to pollen or sunscreen, which tend to occur on photoexposed portions of the skin.
- Biopsies demonstrate nonspecific features of dermatitis but are only useful in excluding some photosensitive conditions, such as lupus erythematosus, dermatomyositis, or phototoxic drug eruption.
- In many cases, the diagnosis is only definitively established after removal of the suspected exogenous agent, with observed clinical improvement.

Treatment

- Withdrawal of the suspected exogenous agent is a critical element of management.
- Sunlight and allergen avoidance are important to management. Patients should understand that UVA wavelengths, which produce most drug-induced photoallergic drug eruptions, can pass through window glass and produce disease.
- Use of moderate to potent topical corticosteroids is an effective topical treatment.
- Severe cases may require 3 to 14 days of oral prednisone (10–40 mg per day).

Clinical Course

Discontinuing the offending drug usually results in complete resolution in 2 to 3 weeks, although some reactions may persist for a longer duration.

Fig. 19.6. Patient with photoallergic dermatitis manifesting as pruritic erythema on the forehead, malar cheeks, and chin due to cotrimoxazole. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 19.7. Patient with photoallergic erythema and induration of the malar cheeks and V of the neck caused by hydrochlorothiazide, one of the most common causes of photoallergic drug eruptions.

Fig. 19.8. Patient with eczematoid photoallergic erythema of the ears, lateral neck, and V of the neck caused by prochlorperazine, which is a relatively uncommon cause of photoallergy.

Phototoxic Drug Eruption ICD10 code L56.0

Commonly Implicated Drugs and Foods in Phototoxic Eruptions

- Amiodarone
- Capecitabine
- Celery root
- Demeclocycline
- Doxycycline
- 5-Fluorouracil
- Flutamide
- Methotrexate
- Nonsteroidal antiinflammatory drugs (NSAIDs; weak phototoxic drugs)
- Psoralen
- Tetracycline
- Voriconazole

Pathogenesis

Phototoxic drug eruptions are dose-related events. Because the reactions are not immunologically mediated, the condition will occur in any person given enough of the drug and incurring sufficient light exposure. In many cases, phototoxic drug eruptions resemble sunburn, but some drugs produce characteristic reactions, such as the onycholysis observed with tetracyclines or bullous reactions, which resemble porphyria cutaneous tarda caused by naproxen. Rarely, phototoxic eruptions are due to foods (e.g., celery root). Note that oral psoralen, in combination with UVA light (PUVA), is an intentional (iatrogenic) phototoxic drug eruption used to treat dermatologic disease.

Clinical Features

- Patients usually demonstrate erythema in affected areas within hours after light exposure. This is in contrast to photoallergic eruptions, which take 1 day or longer to foment because of dependence on the immune system.
- Erythema develops in a photodistributed pattern (Figs. 19.9 and 19.10) and is often clinically indistinguishable from sunburn.
- Patients experience tender or painful skin that feels like sunburn.
- Severe cases may blister—a second-degree phototoxic drug eruption.
- Patients who continue to receive the drug and are exposed to light may develop variable erythema, which may be intermixed with variable hypopigmentation and hyperpigmentation (Fig. 19.11).

Clinical Diagnosis

- The clinical presentation resembles sunburn. Therefore, when patients present with sunburn-like reactions, clinicians should always review medication lists to include over-the-counter (OTC) medications as potential causes of a phototoxic eruption.
- A shave or punch biopsy can support the diagnosis of a phototoxic drug eruption. It is useful in problematic cases to exclude other photosensitive dermatoses (e.g., lupus), with the exception of sunburn, which is histologically identical.

Treatment

- Withdrawal of the suspected drug is indicated, if clinically feasible. This may not be possible in all cases, such as the patient shown in Fig. 19.11, who was taking flutamide for his prostate cancer.
- Nonspecific treatment measures, such as cool compresses, cool baths, topical cooling agents containing menthol and camphor, and compounds containing aloe vera may provide relief but do not change the natural course of the reaction.
- The use of topical lidocaine-containing agents is controversial but is an option that can be discussed with the patient if he or she is not allergic to such medications.
- Topical corticosteroids and systemic corticosteroids are not particularly effective because the process is not mediated by the immune system.

Clinical Course

Assuming that the patient does not continue to receive the drug, the reaction wanes over 1 to 2 weeks. Affected areas may tan and/or peel but are without permanent sequelae in most cases.

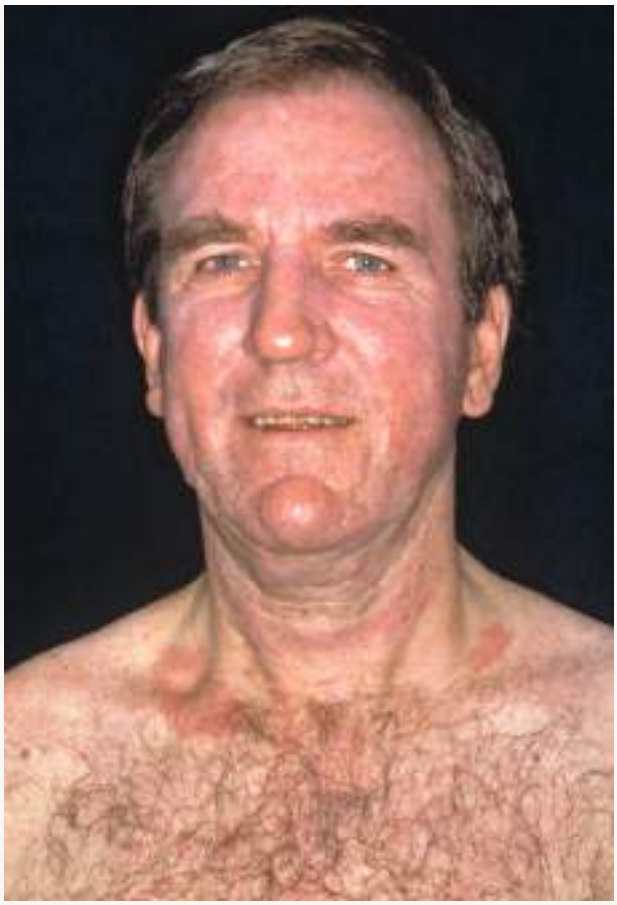

Fig. 19.9. Patient with phototoxic reaction manifesting as erythema of the face, lower neck, and upper chest attributable to tetracycline. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 19.10. Phototoxic reaction manifesting as erythema of the arms in a patient taking demeclocycline. Note that the area underneath the patient's watchband is not involved. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 19.11. Chronic phototoxic reaction manifesting as low-grade erythema, hypopigmentation, and hyperpigmentation in a patient taking flutamide. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Pellagra-Associated Medications
- Anticonvulsants
- Antidepressants
- 5-Fluorouracil
- Isoniazid (INH)
- 6-Mercaptopurine
- Sulfapyridine

Pathogenesis

Pellagra is caused by a niacin (nicotinic acid, vitamin B3) deficiency or by a deficiency in its metabolite, nicotinamide. Nicotinamide comes from the diet or from endogenous synthesis from tryptophan. Because vitamins B_1, B_2, and B_6 are required cofactors for the production of nicotinamide, diets with an insufficient intake of B vitamins may cause pellagra. Niacin is found in many foods, including baker's yeast, liver, and cereals, but not corn. Pellagra is usually seen in those with limited diets (e.g., those dependent on maize alone), alcoholics, those with bowel resections, those with carcinoid syndrome (tryptophan is diverted into excess serotonin production), those with Hartnup syndrome, and in association with certain medications (see box). Although uncommon in industrialized nations, pellagra is probably often missed.

The Four Ds of Pellagra
- ***D***ermatitis
- ***D***iarrhea
- ***D***ementia
- ***D***eath

Clinical Features

- Pellagra causes a photodermatitis, with erythema followed by desquamation. The distribution resembles that of other photodistributed eczematous processes (Figs. 19.12 and 19.13).
- Casal necklace is a marginated eruption of the neck that resembles a necklace (Fig. 19.14).
- Angular cheilitis is variably present.
- Systemic manifestations may include fatigue, photophobia, diarrhea (and other gastrointestinal [GI] symptoms), and dementia (seen in about 4–10% of cases).

Clinical Diagnosis

- Persons with photodermatitis, GI disorders, and psychiatric complaints must be screened for pellagra. In suspicious cases, probative questions regarding diet, alcohol consumption, and other medications should be pursued.
- A 3- or 4-mm punch biopsy may strongly support the diagnosis of a nutritional disorder, but the findings are subtle and are best made by a dermatopathologist with expertise in this area.
- A complete blood count (CBC) may serve as a quick screening test because about 90% of patients with pellagra will have a microcytic hypochromic anemia due to other dietary deficiencies.
- Depressed urine levels of *N*-methylnicotinamide and 2-pyridone are diagnostic, but many laboratories do not perform these tests.
- In most cases, the diagnosis is established by treatment with niacin or nicotinamide supplementation and observation of the dermatitis because improvement typically occurs in just days.

Treatment

- Topical moisturizers provide some immediate relief.
- Any medications known to aggravate pellagra should be discontinued, if possible.
- Dietary education should be given to the patient, as should supplementation of oral niacin (nicotinic acid) at an initial dose of 50 to 100 mg tid, which can then usually be reduced based on the patient's clinical response over 2–4 weeks.
- Patients often need supplementation of other B vitamins.

Clinical Course

Unrecognized and untreated pellagra has a high fatality rate. In one study, conducted at a mental institution in Alabama in the early 20th century, a fatality rate of 64% was observed.

Fig. 19.12. Intense photodistributed eczematoid pellagra in a man being treated with isoniazid. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 19.13. Patient with pellagra presenting as photodistributed erythema and scale on the tops of her feet. The patient also had erythema of her forearms. She had two risk factors, isoniazid therapy and a short bowel syndrome due to surgical resection. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 19.14. Patient with classic Casal necklace of pellagra presenting as a sharply demarcated dermatitis of the V of the neck.

Systemic Lupus Erythematosus ICD10 code M32.9

Pathogenesis

Systemic lupus erythematosus (SLE), sometimes referred to simply as lupus, is an autoimmune disorder characterized by autoantibodies against various components of nuclear DNA. Subtypes of these antibodies include anti–double-stranded DNA antibodies (anti-dsDNA), anti-Smith antibodies (anti-Sm), and antihistone antibodies. The latter are usually associated with drug-induced lupus (see box).

Commonly Implicated Drugs in Drug-Induced Systemic Lupus Erythematosus

- Hydralazine
- Isoniazid
- Minocycline
- Phenytoin
- Procainamide
- Quinidine

Clinical Features

- SLE usually affects middle-aged adults, with women being affected more often than men.
- Malar erythema of the face (butterfly rash) is the classic cutaneous finding (Fig. 19.15).
- Macular erythema, erythematous papules, or even urticarial lesions can be observed on photoexposed skin of the face, neck, back, chest, arms, and hands (Figs. 19.16 and 19.17).
- When the hands are involved, lesions tend to involve the interphalangeal skin, in contrast to dermatomyositis, which tends to involve skin over the joints (Fig. 19.17).
- Involvement of the oral mucosa is not uncommon (Fig. 19.18).
- Rarely, vesicles or blisters may form (bullous systemic lupus erythematosus).
- About 5% to 10% of patients with SLE may demonstrate discoid lupus erythematosus lesions.
- Diffuse nonscarring alopecia can occur, often with broken-off hairs (so-called lupus hair).
- Constitutional symptoms can include fever and malaise.
- Systemic complications include arthralgias and myalgias, renal disease (≈50%), lymphoreticular complications, cardiac complications, and involvement of the bone marrow or central nervous system.

Clinical Diagnosis

- The appearance of a photodistributed erythema with systemic symptoms should prompt an evaluation for SLE.
- An ANA laboratory test should always be done, with nearly all cases showing ANA positivity, often in high titer.
- Additional laboratory studies include a CBC, determination of the erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) level (useful to monitor disease activity), urinalysis, renal function tests, liver function tests, and total complement activity (CH50; depressed values correlate with renal disease).
- A punch biopsy (3 or 4 mm) of lesional skin that includes subcutaneous fat will usually be diagnostic of SLE, although it is often not possible to exclude dermatomyositis or other forms of lupus erythematosus completely without clinical details.
- A punch biopsy (3 or 4 mm) from photodistributed nonlesional skin for direct immunofluorescence will highlight a lupus band in 60% to 80% of cases.

Treatment

- Photoprotection (e.g., hats, clothing, sun avoidance, UVA sunscreen) is necessary.
- Drugs that may induce SLE (see box) must be withdrawn or substituted.
- Topical corticosteroids may be tailored to the site and severity of disease. In general, truncal lesions often require moderate to ultrapotent corticosteroids.
- Oral prednisone (starting at 40–60 mg/day) may be used, with a taper based on the response.
- Immunosuppressive drugs to use in a steroid-sparing regimen usually include mycophenolate mofetil, cyclosporine, azathioprine, cyclophosphamide, and rituximab.
- Hydroxychloroquine, chloroquine, or quinacrine may be used to manage cutaneous disease.

Fig. 19.15. Patient with classic malar erythema (butterfly rash) of systemic lupus erythematosus.

Fig. 19.16. Patient with severe acute lupus erythematosus, with marked erythema in a photodistribution. (From the William Weston Collection, Aurora, CO.)

Fig. 19.17. Patient with severe acute lupus erythematosus, with marked erythema on the arms and hands. Note the characteristic interphalangeal involvement of the erythema.

Fig. 19.18. Erosions of the mucosal surface of the lip in a patient with systemic lupus erythematosus. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Subacute Cutaneous Lupus Erythematosus ICD10 code L93.1

AUTOIMMUNE DISORDER

Commonly Implicated Drugs in Drug-Induced Subacute Cutaneous Lupus Erythematosus

- Diltiazem
- Hydrochlorothiazide
- Leflunomide
- Oxprenolol
- Terbinafine
- Ranitidine
- Verapamil

Pathogenesis

Subacute cutaneous lupus erythematosus (SCLE) is a largely cutaneous variant of lupus. As the name implies, the clinical course is usually less severe and less acute than SLE. SCLE is characterized by the presence of anti-Ro (anti-SSA) antibodies and, less often, by anti-La (and SSB) antibodies. Less often, SCLE appears to be triggered by some medications (see box).

Clinical Features

- Middle-aged to elderly women are usually affected.
- In SCLE, the photodistributed lesions usually affect the face, upper chest, arms, and upper back.
- The malar erythema of SCLE may be clinically indistinguishable from that of SLE.
- Erythematous lesions of the arms and trunk may demonstrate annular lesions (Figs. 19.19 and 19.20) or erythematous scaly plaques that may resemble psoriasis (Fig. 19.21). Not all lesions manifest scale.
- The scarring and follicular hyperkeratosis of discoid lupus erythematosus are notably absent.
- Sicca syndrome if often present.
- Systemic symptoms are variable and can be minimal (e.g., low-grade malaise, vague myalgias, arthralgias) to frank impairment of another organ system (e.g., renal or cardiac).
- About 5% to 10% of patients with SCLE have vasculitis at some point during the course of their disease.

Clinical Diagnosis

- The appearance of photodistributed and annular lesions is suggestive of SCLE, particularly in a middle-aged to elderly woman.
- An ANA test is positive in all cases, with anti-Ro (SSS-A) antibodies present in more than 90% of cases.
- A punch biopsy (3 or 4 mm) of lesional skin that includes subcutaneous fat often supports the diagnosis of SCLE, although it is often impossible to exclude dermatomyositis without clinical details.
- A punch biopsy (3 or 4 mm) from photodistributed nonlesional skin for direct immunofluorescence reveals a lupus band or other supportive findings in 60% to 80% of cases. This test is usually only needed in problematic cases.

Treatment

- Photoprotection (e.g., hats, clothing, sun avoidance, UVA sunscreen) is important.
- Drugs that may induce SCLE should be withdrawn.
- Topical corticosteroids can be tailored to the site and severity of disease. In general, truncal lesions require moderate to ultrapotent corticosteroids.
- Oral prednisone (usually 20–40 mg/day) can be used initially and tapered based on the response.
- Hydroxychloroquine (200 mg PO qd or bid) is useful, but it may take 4 to 8 weeks to see improvement.
- Oral isotretinoin may be used as a tertiary agent, 1 to 2 mg/kg per day.

Clinical Course

SCLE is usually relatively easy to control, and patients may go into spontaneous remission.

Fig. 19.19. Young woman with subacute cutaneous lupus erythematosus and classic photodistributed red annular lesions on the arms. She also had associated malar erythema. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 19.20. Young man with extensive annular lesions with confluence into plaques on the upper back, outer arms, and V of the chest. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 19.21. Man with photodistributed slightly indurated papules and plaques, with subtle scale. This pattern is actually more common than the pattern of the more distinctive annular lesions.

Discoid Lupus Erythematosus ICD10 code L93.0

Pathogenesis

Discoid lupus erythematosus (DLE), also known as chronic cutaneous lupus erythematosus, is the most common form of lupus to involve the skin. DLE is ninefold more common in African American women than in any other population, but white individuals can also be affected. Like other forms of lupus erythematosus, it is considered to be an autoimmune disease, yet only 20% of patients with DLE have a positive ANA response on laboratory testing. About 5% to 10% of patients with cutaneous lesions of DLE have SLE or SCLE. In contrast to other forms of lupus erythematosus, drug-induced cases are uncommon.

Clinical Features

- Photodistributed lesions of DLE often affect the malar face, upper chest, arms, and upper back.
- Primary lesions appear first as an erythematous indurated plaque, often evolving to include hyperkeratosis and dyspigmentation (Figs. 19.22 and 19.23).
- On occasion, the hyperkeratosis can be considerable (hypertrophic discoid lupus erythematosus).
- Involvement of the conchal bowl of the ear is common and distinctive (Fig. 19.24).
- Patients may demonstrate areas of scarring alopecia (see Chapter 24).
- In contrast to SLE, oral lesions are uncommon but can occur occasionally.

Clinical Diagnosis

- Erythematous plaques, with hyperkeratosis, dyspigmentation, and scarring, occurring in a photodistribution, suggest the diagnosis of DLE.
- Conchal bowl involvement or a scarring alopecia are clinical findings that support a diagnosis of DLE.
- A punch biopsy (3–6 mm) of lesional skin is strongly suggestive or even diagnostic of DLE.
- In select cases, a punch biopsy can also be submitted for direct immunofluorescence.
- Recommended laboratory screening is not universally agreed on but should likely include an ANA test (positive in ≈20% of patients), CBC, chemistry profile, and urinalysis. Some also perform complement studies—C3, C4, and CH50. Laboratory screening is important because 5% to 10% of patients with lesions of DLE will have another form of systemic lupus, SCLE or SLE.

Treatment

- Photoprotection (e.g., hats, clothing, sun avoidance, UVA sunscreen) is a critical component of treatment because the disease is driven largely by UV light.
- Topical corticosteroids should be tailored to the site and severity of disease, but generally potent or ultrapotent topical corticosteroids are used to arrest the disease before large scars are formed.
- Intralesional triamcinolone (5–20 mg/mL) can be used for select plaques.
- Oral prednisone (starting dose, 20–40 mg/day) may be used for persons with extensive disease, with a taper based on the treatment response.
- Hydroxychloroquine (200 mg PO qd or bid) is a pillar of care, but it typically takes 4 to 8 weeks before significant improvement is seen. Smoking can increase liver metabolism of the drug and decrease its efficacy.
- Other medications sometimes used include chloroquine, quinacrine, and thalidomide.

Clinical Course

Untreated (or incompletely treated) DLE can cause permanent and disfiguring scarring and alopecia. Rarely, patients with DLE without systemic disease initially will progress to SLE or SCLE at a later point. Although such later progression is unusual, it is useful to screen persons with DLE periodically throughout the course of their illness or if the course of their illness seems to change in some way.

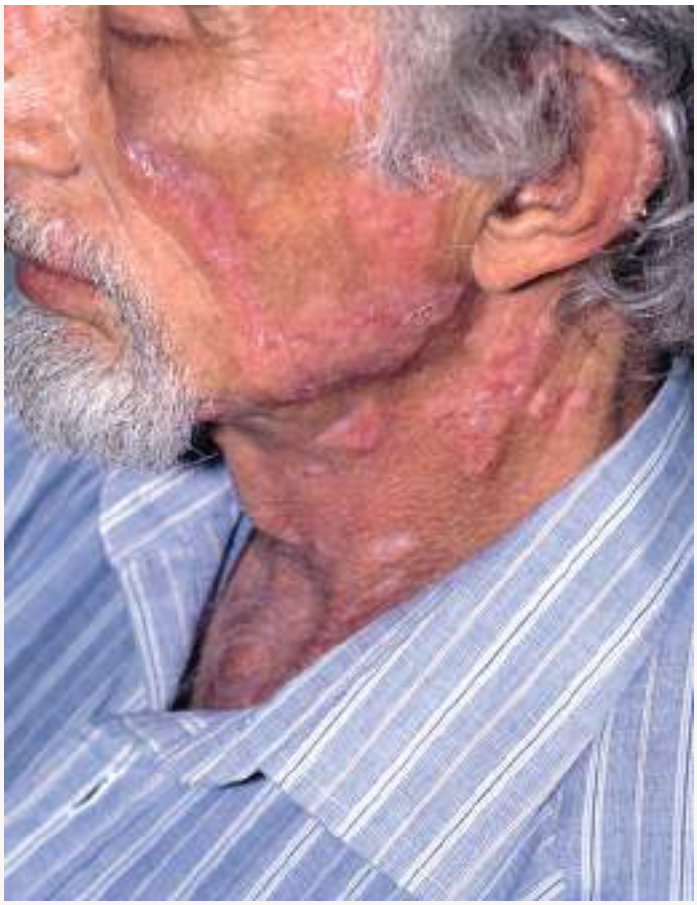

Fig. 19.22. Patient with severe discoid lupus erythematosus, with both atrophic and hypertrophic erythematous to violaceous plaques in a photodistributed pattern. Note the involvement of the conchal bowl.

Fig. 19.23. Patient with discoid lupus erythematosus of the right cheek demonstrating follicular hyperkeratosis, scale, atrophy, and severe dyspigmentation.

Fig. 19.24. Patient with characteristic erythematous plaque with scale, atrophy, and dyspigmentation of the conchal bowl.

Dermatomyositis ICD10 code M33.90

Pathogenesis

Dermatomyositis (DM) is an autoimmune disease characterized by genetic predisposition, but also it often has a precipitating event, such as infection, medication, or malignancy. The pathogenesis of DM is not well understood, but about 95% of patients will demonstrate a positive ANA or, less often, antisynthetase autoantibodies. About 40% of patients with DM will have myositis-specific autoantibodies, such as anti-Jo-1, anti-SRP, and anti-Mi-2. Other rare antibodies have been identified on occasion. Approximately 10% to 20% of patients will demonstrate clinical features that overlap with other connective tissue disease (e.g., lupus erythematosus). Depending on the study, anywhere from 4.4% to 60% of cases have been found to be malignancy-associated (paraneoplastic). This wide range is probably caused by variations in the population assessed; suffice it to say that some cases of DM can be associated with malignancy.

Clinical Features

- DM causes a photosensitive dermatitis. Erythema affecting the malar face may resemble the butterfly rash of lupus erythematosus, with variable scale (Fig. 19.25).
- DM may also affect nonphotoexposed skin, especially the scalp (>80%) and bony prominences of the upper back (so-called shawl sign).
- Many patients will state that the condition began with an itchy scalp and descended from there.
- A so-called heliotrope eruption around the eyes consists of periorbital edema and violaceous erythema of the upper eyelids (Figs. 19.25 and 19.26) is common.
- Gottron papules are red to violaceous flat-topped lesions of the dorsal interphalangeal joints (Fig. 19.27). Gottron papules may become atrophic and white in color over time.
- Gottron sign refers to violaceous streaking over the bony prominences of the hands, forearms, and elbows (and possibly the knees). The so-called holster sign refers to similar erythema over the hips.
- There is periungual telangiectasia with variable cuticular hyperkeratosis, also called the Samitz sign (Fig. 19.28).
- Rare cutaneous findings include vasculitis, panniculitis, and acquired ichthyosis.

Diagnosis

- A patient with a photodistributed rash and with suggestive clinical findings, such as a heliotrope rash, Gottron sign, Gottron papules, shawl sign, holster sign, or periungual telangiectasia, should be screened for possible DM.
- Consider performing a 3- to 6-mm punch biopsy (not a shave biopsy) of lesional skin. The histologic findings, although not specific, are usually supportive of the diagnosis. Histologic overlap with SCLE is particularly common, and, in this regard, clinical correlation is important.
- Laboratory screening should include ANA testing and muscle enzyme studies (levels of creatinine kinase and aldolase). The absence of muscle involvement does not exclude the disease, because amyopathic dermatomyositis exists and does not have an associated myopathy.
- Ultimately, the patient will need referral to an internist, dermatologist, or rheumatologist for consideration of magnetic resonance imaging (MRI; or possibly electromyography [EMG]) and muscle biopsy and, based on age, gender, and review of systems, consideration of appropriate screening for malignancy.

Treatment

- Acute management includes photoprotection (UVA, UVB sunscreens) and oral prednisone (0.25–1.0 mg/kg per day, depending on severity of the disease).
- Hydroxychloroquine (200 mg PO, qd or bid) is a common long-term, steroid-sparing agent, but improvement after starting the drug may take 4 to 8 weeks, with maximal improvement occurring up to 6 months after beginning the drug.
- Oral methotrexate (5–30 mg/week) or mycophenolate mofetil are options for unresponsive patients.

Clinical Course

With treatment, about 80% of patients will be free of disease activity within 4 years.

Fig. 19.25. Patient with malar erythema, with red heliotrope rash of the upper eyelids. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 19.26. Patient with prominent violaceous heliotrope rash of the upper eyelids. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 19.27. Patient with dermatomyositis with Gottron papules demonstrating erythema and scale over the joint of the hand. (From the William Weston Collection, Aurora, CO.)

Fig. 19.28. Patient with telangiectasia and hyperkeratosis of the cuticle (Samitz sign), with a normal finger on the left for comparison.

Sunburn ICD10 codes L55.0, L55.1, L55.2, L55.8, L55.9

Pathogenesis

Sunburn is caused by excess exposure to UVB light, which represents wavelengths blocked by window glass. To a lesser degree, UVA light produces some solar-induced changes in pigment but is far less effective in producing sunburn. Sunburn can occur from natural sunlight but may be produced by artificial light sources, including tanning beds and therapeutic light sources in a dermatologist's office.

Clinical Features

- Sunburns are photodistributed but, because of clothing or positioning, may produce unusual patterns.
- Erythema usually begins within hours of sun exposure and reaches maximum intensity in 12 to 24 hours (Figs. 19.29 and 19.30).
- After 24 hours, the erythema progresses to a darker hue, followed by desquamation that usually begins 2 to 4 days later, although this is highly variable.
- Severe sunburns may produce a second-degree burn, with superficial blisters (Fig. 19.31).
- Following desquamation, the skin produces increased pigmentation (a tan) that will last for weeks (Fig. 19.32).

Diagnosis

- Clinical presentation and history are usually diagnostic, and the patient generally reports the burn.
- Rare cases may require a shave or punch biopsy to differentiate sunburn from other photosensitive disorders. The histologic findings are usually strongly suggestive of sunburn but will not allow differentiation from drug-induced phototoxic reactions (e.g., reaction to tetracyclines).

Treatment

- No treatment is an option for some sunburns because the condition will resolve without therapy.
- Cool compresses and cool baths are helpful in producing some pain relief.
- Topical cooling agents containing menthol and camphor, or compounds containing aloe vera, may provide some relief but do not change the natural course of the sunburn.
- NSAIDs are used in the first 24 to 48 hours.
- For severe cases, oral indomethacin (50–100 mg PO tid) for the first 24 hours reduces pain and erythema. Indomethacin is a potent prostaglandin inhibitor, but dosing beyond 24 hours after sun exposure does not alter the course of disease.
- Topical lidocaine solutions are controversial and must be used with caution over large areas to prevent lidocaine toxicity. This may be discussed with the patient.
- Topical corticosteroids and systemic corticosteroids are not typically used.

Prevention

Education is important and should include instructions to avoid the midday sun (between 10:00 AM and 2:00 PM), when 60% of the entire day's sunlight strikes the planet. Protective clothing, shade, and sunscreens with a sun protection factor (SPF) of 30 or higher are useful. As demonstrated in Fig. 19.32, tighter weaves and darker shades, or even specially treated fabrics, are more effective in blocking UV light.

Fig. 19.29. Patient with acute first-degree sunburn acquired at a tanning booth. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 19.30. Close-up of a patient with acute first-degree sunburn. The large nevus was an atypical (dysplastic) nevus. The patient needs education regarding sun damage and melanoma!

Fig. 19.31. Patient with acute second-degree sunburn with blisters. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 19.32. Patient with tanning after sun exposure through white patterns of clothing. The lesson is that UV light will go through some clothing. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 20
Purpuric and Hemorrhagic Disorders

Purpuric and hemorrhagic (P&H) disorders may be caused by systemic illness, potentially fatal infections (e.g. meningococcemia), coagulopathies, vascular occlusive disorders (e.g. cryoglobulinemia), and inflammatory disorders of blood vessels (e.g. vasculitis).

Some Purpuric Disorders

- Acute bacterial endocarditis
- Acute hemorrhagic edema
- Cryofibrinogenemia
- Cryoglobulinemia
- Disseminated candidiasis
- Disseminated gonococcal infection
- Disseminated staphylococcal infection
- Henoch-Schönlein purpura
- Meningococcemia
- Pityriasis lichenoides et varioliformis acuta
- Progressive pigmented purpura
- Purpura fulminans
- Rocky Mountain spotted fever
- Solar purpura
- Traumatic purpura

IMPORTANT HISTORY QUESTIONS

How long have the lesions been present?

Some P&H disorders occur acutely, such as Rocky Mountain spotted fever, whereas other conditions present with a chronic pattern (e.g., progressive pigmented purpura).

Have you had more than one episode?

Some P&H disorders present as a singular event (e.g., meningococcemia, disseminated gonococcal infection), whereas others present as multiple episodes (e.g., pernio, cryofibrinogenemia, Henoch-Schönlein purpura).

What medications do you take?

Some P&H disorders, such as leukocytoclastic (e.g., hypersensitivity) vasculitis and progressive pigmented purpura, may be induced by drugs.

Do you have other known medical conditions?

Collagen vascular disease, in particular, may be associated with leukocytoclastic (hypersensitivity) vasculitis, pernio and chilblains, and cryofibrinogenemia.

Do you or any member of your family have a history of blood clots or a clotting disorder?

Purpura fulminans occurs more often in people with clotting disorders, which can be familial.

Is there a recent history of tick bites or exposure to ticks, especially to a dog with ticks?

This is an important question for establishing a presumptive diagnosis of Rocky Mountain spotted fever.

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the lesions?

This can be an important clue to the diagnosis because some conditions characteristically involve certain anatomic sites. For example, pernio is usually confined to the toes, whereas the rash of Rocky Mountain spotted fever usually begins in acral locations. Some disorders, such as cryoglobulinemia and cryofibrinogenemia, are located at sites exposed to the cold.

Is there any physical evidence of active arthritis or arthralgias?

Some diseases, such as Henoch-Schönlein purpura, cryoglobulinemia, and disseminated gonococcal infection, are often associated with arthritis or arthralgias.

Are there other skin lesions present?

The size and characteristics of the cutaneous hemorrhage may provide clues to the underlying cause. Small nonpalpable purpura (≤4 mm) is usually a noninflammatory event and it is most common in the setting of thrombocytopenia (platelet count <20,000/mm^3) or abnormalities of clotting factors. Small vessel vasculitis usually produces palpable purpura, with elevated papules of up to 10 mm that are surrounded by a rim of erythema, even in addition to the purpura. Large areas of nonpalpable purpura on photo-exposed skin is associated with acquired structural anomalies due to sun damage (e.g., solar purpura). Purpura with a retiform (net-like) pattern is more often associated with vascular occlusion (e.g., calciphylaxis).

Henoch-Schönlein Purpura ICD10 code D69.0

Pathogenesis

Henoch-Schönlein purpura (HSP) is a variant of leukocytoclastic vasculitis (LCV) that affects mostly children, but can also affect adults. HSP is a small vessel vasculitis characterized by circulating immunoglobulin A (IgA)-mediated immune complexes that are deposited in vessel walls (Fig. 20.1). This leads to inflammation and vessel damage. Precipitating factors include viral infections (e.g., parvovirus B19, hepatitis B, hepatitis C, human immunodeficiency virus) and bacterial infections (*Streptococcus, Salmonella,* and *Shigella* spp. and *Staphylococcus aureus*). Renal disease is a feared consequence of HSP, but it occurs in a minority of patients.

Clinical Features

- HSP usually affects children between 2 and 10 years of age, but it may also affect younger children, adolescents, and adults.
- HSP is characterized by the rather abrupt onset of symmetrically distributed palpable purpura (Figs. 20.2 and 20.3).
- In about 5% of cases, there may be pustular lesions (Fig. 20.4), hemorrhagic bullae, or ulcerations.
- The legs are most often affected, followed by the buttocks.
- Young children usually demonstrate urticarial lesions, facial edema, and/or scrotal swelling.
- Systemic features include arthritis and arthralgia, headache, nephritis, and gastrointestinal (GI) symptoms, including GI angina and bowel infarction.

Diagnosis

- The occurrence of palpable purpura in a younger child, particularly in association with arthritis and arthralgias, headache, and GI upset, should suggest HSP. Concern is augmented when there is a history of a preceding infection.
- Patients with suspected HSP should have a 3- or 4-mm punch biopsy for routine hematoxylin and eosin (H&E) studies.
- Ideally, an additional punch biopsy, or a portion of a divided punch biopsy, should be submitted for direct immunofluorescent studies (see Fig. 20.1). This specimen can never be placed in formalin.
- A minimal laboratory evaluation should include a complete blood count (CBC) with differential, liver and renal function tests, urinalysis, stool guaiac testing, throat culture, and determination of the streptozyme level.

Treatment

- For patients with renal disease, a number of retrospective or uncontrolled studies have supported the use of pulse methylprednisolone, with or without cyclophosphamide, triple immunosuppressive therapy (prednisolone, cyclophosphamide, and dipyridamole), corticosteroids and azathioprine, plasma exchange, with or without immunosuppressive therapy, and intravenous (IV) immunoglobulin.
- In children with significant or deteriorating renal disease, treatment should consist of high-dose corticosteroid therapy and an immunosuppressive agent (e.g., azathioprine, cyclophosphamide, or mycophenolate mofetil). Consultation with a pediatric nephrologist is important.

Prognosis

In patients who develop renal disease, complete spontaneous remission occurs in about 50%. About 5% of patients with renal disease will develop a progressive course that can include renal failure.

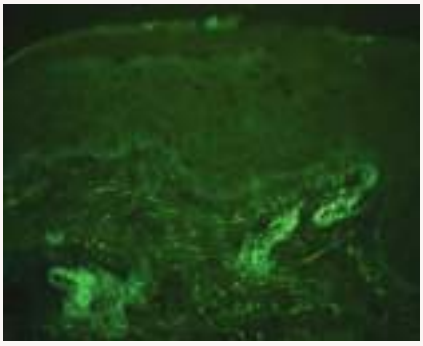

Fig. 20.1. Patient with Henoch-Schönlein purpura, with granular immunoglobulin A in vessels.

Fig. 20.2. Acute Henoch-Schönlein purpura in a child.

Fig. 20.3. Developed Henoch-Schönlein purpura in a young adult.

Fig. 20.4. Close-up of a patient with Henoch-Schönlein purpura illustrating classic palpable purpura, a pustular lesion, and older lesions demonstrating early crusting. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Acute Hemorrhagic Edema of Infancy ICD10 code D69.0

Pathogenesis

Some consider acute hemorrhagic edema (AHE) a unique disease, whereas others consider it a variant of HSP. AHE is also referred to as Finkelstein or Seidlmayer disease. AHE is considered by some to be an entity separate from HSP because of its distinct clinical appearance, the typical lack of systemic symptoms, and the younger ages of affected patients. Like HSP, AHE is a small vessel vasculitis caused by circulating IgA-mediated immune complexes that are deposited in vessel walls. Precipitating factors include viral infections, bacterial infections (e.g., *Streptococcus, Salmonella,* and *Shigella* spp. and *S. aureus*) and, rarely, medications.

Clinical Features

- Classically, AHE affects infants and young children, with most cases occurring in those younger than 2 years. It can rarely affect older children.
- AHE consists of the abrupt onset of symmetrically distributed edematous plaques (Figs. 20.5–20.7) that develop variable hemorrhage (see Figs. 20.6 and 20.7). Sometimes, the hemorrhage is subtle (see Fig. 20.5).
- The face and lower extremities are usually affected, followed by the arms and buttocks. Truncal lesions are uncommon in AHE.
- Although arthritis-arthralgia, nephritis, and GI involvement have been reported, these conditions are uncommon in AHE but are common in HSP.
- Patients with AHE often have a low-grade fever.

Diagnosis

- An infant or young toddler with purpura in fixed urticarial lesions on the face and/or lower extremities should suggest AHE, especially if there is a history of a preceding infection. In Fig. 20.5, the nasal secretions of an upper respiratory infection are readily evident.
- All patients with suspected AHE should have a 3- or 4-mm punch biopsy performed for routine H&E examination.
- Ideally, an additional punch biopsy, or a portion of a larger divided punch should be submitted for direct immunofluorescent studies. This specimen can never be placed in formalin.
- Most cases do not require further evaluation but, in select cases with signs of systemic disease, it may be wise to perform a CBC with differential, liver and renal function tests, urinalysis, stool guaiac testing, throat culture, and determination of streptozyme level.

Treatment

- In the absence of systemic findings, no treatment is necessary, because AHE is a self-limited disease without permanent sequelae.
- In patients with systemic findings, anecdotal cases have responded well to oral corticosteroids.

Prognosis

AHE typically resolves within 2 to 3 weeks, without treatment. There have been case reports of recurrent disease.

Fig. 20.5. Patient with acute hemorrhagic edema manifesting as an urticarial plaque with subtle hemorrhage. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.6. Patient with developed case of acute hemorrhagic edema manifesting as an urticarial plaque with extensive hemorrhage.

Fig. 20.7. Large urticarial plaques with extensive hemorrhage of the lower extremity in an infant. (From the Joanna Burch Collection, Aurora, CO.)

Drug-Induced Vasculitis

Drugs

- Allopurinol
- Cephalosporin
- Famciclovir
- Gefitinib
- Penicillin
- Phenytoin
- Sirolimus
- Sulfonamide
- Thiazides
- Warfarin

Food and Drug Additives

- Drug dyes
- Sodium benzoate

Pathogenesis

Although LCV is probably the more modern term, the older synonym, "hypersensitivity vasculitis" (HV) emphasizes that this small vessel vasculitis occurs as a reaction to a perturbation in homeostasis. LCV (HV) may occur for a variety of reasons, including infections (streptococcal infections), medication reactions (see box), certain ingestions, and collagen vascular disease. Urticarial vasculitis is another distinct subset of LCV (HV) (see Chapter 5). HV can be IgM-mediated (collagen vascular diseases), IgA-mediated (HSP) or, less often, IgG-mediated.

Clinical Features

- LCV (HV) presents with the abrupt onset of palpable purpura that mainly affects dependent areas of the lower legs, in particular.
- Most individual lesions of LCV (HV) are 1 to 6 mm in size, but larger lesions are not uncommon (Figs. 20.8 and 20.9).
- Clinical variants may include pustules, hemorrhagic vesicles (Fig. 20.10), purpuric lesions with central necrosis, and lesions in a reticulated pattern.
- Lesions may be asymptomatic, or a burning sensation or pain may be reported by some patients.
- Systemic symptoms may include fever, malaise, and arthralgias (the latter is most common).
- Most cases of LCV (HV) in adults are confined to the skin, but any organ system, including the kidneys, GI tract, joints (arthritis), lungs, and heart can be involved.

Diagnosis

- The sudden onset of palpable purpura on the lower extremities of an adult should raise suspicion for LCV (HV), and a history and review of systems should be carried out to identify a potential trigger.
- All cases of suspected LCV (HV) should have a 3- or 4-mm punch biopsy performed to include the subcutaneous fat. If possible, ulcerated or necrotic lesions should be avoided.
- An additional punch biopsy of perilesional skin should be submitted for direct immunofluorescent studies. This specimen cannot be placed in formalin.
- Reasonable additional laboratory screening studies may include a CBC, throat culture (for streptococcal infection), urinalysis (to exclude renal involvement), comprehensive metabolic panel (to include renal function studies and liver enzymes), and stool guaiac testing.
- Other studies, including testing for levels of cryoglobulin, complement (C1q, C3/C4, CH50), rheumatoid factor, antinuclear antibody (ANA), and extractable nuclear antigen antibodies (ENAs), HIV testing, hepatitis B and C studies, and chest x-ray may be ordered in certain cases.

Treatment

- Removal or treatment of the precipitating cause is always the initial step in management.
- Cases of small vessel vasculitis limited to the skin can be treated with prednisone (20–60 mg/day, with a taper over 2 to 3 weeks), colchicine (0.6 to 2.4 mg/day), and dapsone.

Clinical Course

Individual lesions of LCV (HV) heal over 2 to 4 weeks but may leave a reddish-brownish discoloration (hemosiderosis) or scar. Patients may have a single episode of LCV (HV) or multiple recurrent episodes. Rare patients may experience the continued development of new lesions without interruption.

Fig. 20.8. Hydrochlorothiazide-induced adult hypersensitivity vasculitis. The patient had no evidence of systemic involvement. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.9. Adult hypersensitivity vasculitis of unknown cause in an adult Hispanic man showing generalized involvement, including the upper arms and torso. The cause was never identified. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.10. Severe adult hypersensitivity vasculitis in an adult with large hemorrhagic bullous lesions and superficial ulcerations. The patient had arthralgias and mild renal involvement.

Disseminated Gonococcal Infection ICD10 code 154.9

Introduction

In 2014, there were more than 350,000 cases of disseminated gonococcal infection (DGI) reported, with an estimated 300,000 additional cases unreported. DGI is due to intravascular septicemia caused by *Neisseria gonorrhoeae*. The bacterium gains access to the bloodstream from asymptomatic or untreated genital infections. DGI develops in 1% to 3% of all patients with gonorrhea, and the vast majority of cases occur in women. There is an increased risk of dissemination during menstruation, during pregnancy, or with pelvic operations or the placement of an intrauterine device. Patients with deficits in the later components of the complement pathway are particularly prone to DGI.

Clinical Presentation

- DGI usually occurs 1 week after menstruation or 2 to 3 weeks after the initial gonococcal infection.
- Cutaneous lesions are present in more than 60% of patients and consist of tender hemorrhagic lesions, usually on the arms and legs (Figs. 20.11–20.13). A pustular component is not uncommon. Cutaneous lesions often present before arthritic symptoms.
- The number of lesions is variable, but, in most cases, there are fewer than 10 lesions.
- A monoarticular arthritis or arthralgia is present in more than 80% of patients and tends to affect larger joints.
- Potential systemic involvement includes tenosynovitis, perihepatitis, meningitis, and endocarditis.

Diagnosis

- Made when there are pustular or pustular-hemorrhagic skin lesions, with arthritic symptoms, in the appropriate social circumstances.
- A recent suspicious sexual contact, history of genitourinary symptoms, and history of past sexually transmitted diseases supports the diagnosis, but DGI must be considered even in the absence of this information. Most patients do not report active urogenital symptoms at the time of a DGI.
- A punch biopsy can be performed but it is often unnecessary. Organisms can sometimes be demonstrated by tissue Gram stain, but tissue cultures are usually negative.
- CBC with an elevated white blood cell (WBC) count supports an infectious process. Leukocytosis is present in most cases.
- Patients with suspected DGI should have polymerase chain reaction (PCR)-based studies of the throat, endocervix (or urethra in men), and anal canal and blood cultures. Blood cultures are positive in about 50% of cases.

Treatment

- Before treatment of DGI is commenced, it is recommended that the Centers for Disease Control and Prevention (CDC) website be checked for the latest treatment guidelines (https://www.cdc.gov/std/gonorrhea/treatment).
- All patients with DGI should be hospitalized.
- Ceftriaxone (1 g IM or IV q24h) plus azithromycin 1 g orally in a single dose represents current first-line therapy. Alternative therapies include cefotaxime (1 g IV q8h) or ceftizoxime (1 g IV q8h) plus azithromycin 1 g orally in a single dose. These treatments are continued for 24 to 48 hours beyond clinical improvement, and then patients are often switched to cefixime (400 mg PO bid) for at least another week of therapy.

Clinical Course

Bacteremia with the development of new cutaneous lesions typically lasts for about the first 3 to 5 days of illness, with joint symptoms predominating after that time. Untreated DGI can cause permanent joint damage.

Fig. 20.11. Patient with disseminated gonococcal infection, with pustular and hemorrhagic lesions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.12. Patient with disseminated gonococcal infection demonstrating papulonecrotic lesion with an intense rim of erythema. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.13. Patient with early papulonecrotic lesion in disseminated gonococcemia associated with joint swelling and pain of the wrist. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Meningococcemia ICD10 code A39.2

Pathogenesis

Meningococcemia is a septicemic infection caused by the gram-negative diplococci, *Neisseria meningitidis*. There are five serotypes, with group B causing most infections in the United States. Transmission is by aerorespiratory spread. The nasopharynx is the only reservoir; carriage rates in the United States range from 5% to 10%. The disease often causes outbreaks in schools and colleges.

Clinical Presentation

- Meningococcemia develops 2 to 10 days after the onset of a nasopharyngeal infection; the latter is usually mild and unnoticed but can involve variable nasal discharge or a sore throat.
- Septicemia usually develops suddenly, with fever, chills, myalgia, arthralgia, and polyarthritis.
- Cutaneous lesions are centrifugal and are most common on the volar wrists, forearms, palms, lower legs, and soles. Unusual cases may involve the trunk and spare acral surfaces.
- Petechiae are seen initially in two-thirds of cases (Figs. 20.14–20.16). Atypical lesions include large ecchymoses, mottled erythema, morbilliform lesions, erythema nodosum, vesicles, pustules, and ulcers.
- Lesions may occur in successive waves, with lesions varying from a handful to several hundred.
- Hypotension and circulatory collapse can occur rapidly, and patients must be closely followed.
- Disseminated infection may occur in almost any organ or organ system.

Diagnosis

- In about 70% of cases, bacteria can be visualized with a Gram stain or Wright stain, using material taken from the buffy coat of peripheral blood or from smears taken from a skin biopsy. Although these tests can be done rapidly, before culture results are available, such techniques are largely a lost skill.
- Cultures of the nasopharynx, blood and skin, and other organs are dictated by the clinical presentation (cerebrospinal fluid in suspected meningitis) and provide evidence of meningococcemia.
- A 3- or 4-mm punch biopsy, which includes subcutaneous tissue, is not often diagnostic because the organism cannot always be visualized, even with a tissue Gram stain.
- A CBC with an elevated WBC count provides presumptive evidence of an infectious process, with most cases demonstrating a leukocytosis.
- A commercially available latex agglutination study is available, but false-positives and false-negatives have been reported with this test.

Treatment

- All patients with suspected meningococcemia must be hospitalized.
- IV penicillin G (300,000 units/kg per day), for a minimum of 7 days, is the treatment of choice. Chloramphenicol can be used in patients allergic to penicillin.
- Other treatments include cefuroxime, ceftriaxone, cefotaxime, and azithromycin. Ciprofloxacin and rifampin are often used as prophylaxis in exposed persons.

Clinical Course

The mortality rate in untreated cases ranges from 70% to 100%, depending on the series. Treated cases have a reported mortality rate of 10% to 15%. A subset of patients with meningococcemia develops disseminated intravascular coagulation (DIC; purpura fulminans). Rarely, patients may develop a chronic meningococcemia variant that produces minimal organ damage.

Fig. 20.14. Admixture of petechial and purpuric lesions in a woman hospitalized for meningococcemia. (From the William Weston Collection, Aurora, CO.)

Fig. 20.15. Patient with early lesions of meningococcemia presenting as red papules with subtle hemorrhage. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.16. Close-up of developed petechial lesions in meningococcemia. This case occurred in a college student. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Rocky Mountain Spotted Fever ICD10 code A77.0

Pathogenesis

Rocky Mountain spotted fever (RMSF) is an infection produced by the obligate intracellular parasite, *Rickettsia rickettsii.* In the western United States, the wood tick *(Dermacentor andersoni)* is the most important vector; in the eastern and southern United States, the dog tick *(Dermacentor variabilis)* is the most important vector. The CDC has estimated that there are about 2000 new cases of RMSF in the United States every year. Although first described in the Rocky Mountain region, the highest incidence is in the south Atlantic (North Carolina) and central United States (Fig. 20.17). Because of outdoor exposure, RMSF usually affects children, who account for about 50% of cases.

Clinical Features

- The incubation period after a tick bite is 2 to 14 days.
- Symptoms of RMSF may be insidious or abrupt.
- The classic triad of RMSF includes rash, fever (100–104°F [38–40°C]), and headache (mild to severe); other symptoms include malaise, arthralgias and myalgias. A rash is not present in about 10% of cases.
- The rash typically begins as pink macules on distal skin—wrists, ankles, palms, soles—with centripetal spread to the trunk and face. The macules deepen in color over 1 to 3 days, and petechiae and ecchymoses develop (Figs. 20.18–20.20).
- Systemic manifestations include GI involvement (e.g., abdominal pain, nausea, vomiting, diarrhea), seen in 30% to 50% of cases, pneumonitis, seen in 12% to 20% of cases, myocarditis, seen in 5% to 25% of cases, skeletal muscle necrosis, seen in 17% to 46% cases, interstitial nephritis, and seizures and coma, seen in 8% to 9% of patients.

Diagnosis

- The classic triad of rash, fever, and headache, occurring in a patient living in an area of high endemicity, or with suspicious exposures, should raise concern for RMSF. The disease is so serious that if the clinical circumstances suggest RMSF, empiric treatment is justified.
- Serologic tests (e.g., indirect immunofluorescent antibody, latex agglutination, enzyme immunoassay) are not useful for diagnosis because these tests do not become positive until 4 to 8 weeks after infection.
- A 3- or 4-mm punch biopsy of lesional skin may demonstrate organisms by immunohistochemical staining, but this special stain is not readily available in most of the country. Immunofluorescent testing on a biopsy has a 30% false-negative rate for detecting the organism.
- Some cases of RMSF require a lumbar puncture to exclude other diseases. Increased lymphocytes or neutrophils in cerebrospinal fluid (CSF) support the diagnosis of RMSF but is not specific.

Treatment

- The treatment of choice for RMSF is doxycycline (100 mg PO bid) for adults and 2.2 mg/kg body weight for children weighing less than 100 pounds. Treatment duration is 7 to 14 days, depending on the response.
- Oral chloramphenicol is an alternative agent for doxycycline-allergic patients and sometimes for pregnant patients.

Clinical Course

Untreated, RMSF has a mortality rate of about 30%, whereas treated disease has a mortality rate of about 4%.

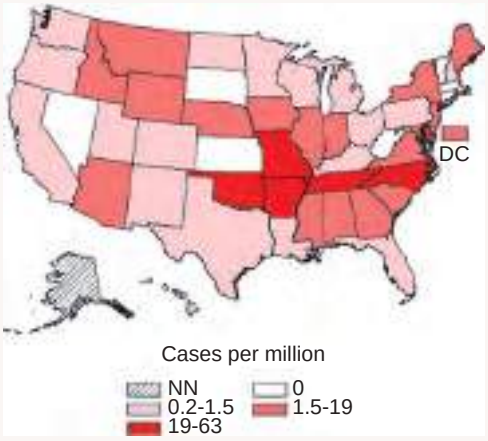

Fig. 20.17. Distribution of reported cases of Rocky Mountain spotted fever. (From https://www.cdc.gov/rmsf/stats.)

Fig. 20.18. Numerous purpuric papules on the lower thigh and upper calf of a patient with Rocky Mountain spotted fever. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.19. Patient with Rocky Mountain spotted fever presenting as small acral petechiae on the foot. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.20. Patient with Rocky Mountain spotted fever manifesting as numerous petechiae on the hand. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Progressive Pigmented Purpura ICD10 code L81.7

Pathogenesis

Progressive pigmented purpura (PPP) is an uncommon disease. There are several variants, including Majocchi purpura, Schamberg purpura, eczematoid purpura (Doucas-Kapetanakis purpura), lichenoid purpura (Gougerot-Blum purpura), and lichen aureus. The pathogenesis of PPP is poorly understood. Histologically, there is a modest perivascular lymphocytic infiltrate, with extravasated erythrocytes. The condition is aggravated by tight-fitting garments, hot baths, saunas, hot tubs, and other stimuli that cause vasodilation. Some cases are associated with medications (see box).

Drug-Induced Progressive Pigmented Purpura

- Acetaminophen
- Amlodipine
- Aspirin
- Chlordiazepoxide
- Interferon-α
- Isotretinoin

Clinical Presentation

- PPP usually affects the lower legs (>90% of cases), but on occasion, it can affect the trunk and upper extremities.
- PPP may be asymptomatic, but some patients report pruritus.
- PPP causes nonpalpable or very minimally palpable pinpoint purpura (usually 1–3 mm in diameter). The color varies from red in active lesions to a golden brown (hemosiderin) in older lesions (Fig. 20.21).
- Schamberg purpura presents with a "cayenne pepper–like" appearance, as if it were sprinkled on the skin, whereas Majocchi purpura presents as vague arcuate or annular configurations. In some cases, the two patterns may be admixed (Figs. 20.22 and 20.23).
- Eczematoid purpura (Doucas-Kapetanakis purpura) is an uncommon variant with a prominent dermatitic component, including erythema and variable scale, with focal purpura. This variant is more likely to be generalized and pruritic.
- Lichenoid purpura (Gougerot-Blum purpura) is an uncommon variant that may resemble mild lichen planus.
- Lichen aureus is a related entity that causes excessive accumulation of hemosiderin, which causes a golden-yellow or golden-brown color.

Diagnosis

- The clinical presentation of numerous, small, nonpalpable purpuric lesions on the lower extremities, often with a sprinkled or vaguely annular appearance, is diagnostic of PPP.
- In atypical or unusual cases, a 2- or 3-mm punch biopsy can be strongly supportive of the diagnosis and can also exclude other noninflammatory purpuras, vasculitis, and thrombotic disorders.

Treatment

- No treatment is required.
- Discontinuation of acetaminophen, aspirin, or chlordiazepoxide may be attempted, where medically sound, simply to see if this improves the condition.
- Low-potency or moderate-potency topical corticosteroids, applied qd or bid, may be helpful for some patients, but topical corticosteroids do not affect the duration of disease.
- Support hose may decrease the amount of hemorrhage. Discontinuance of hot baths, saunas, and hot tubs, and other causes of vasodilation may make the lesions less pronounced.
- Pentoxifylline (400 mg PO tid) for 4 to 8 weeks has been found useful in anecdotal case reports.

Clinical Course

The clinical course is unpredictable, and the disorder may last for weeks, months, or even years.

Fig. 20.21. Patient with progressive pigmented purpura with focal hemorrhage and a golden brown color due to hemosiderin deposition.

Fig. 20.22. Patient with progressive pigmented purpura, with cayenne pepper hemorrhage.

Fig. 20.23. Annular lesion with pinpoint purpura in patient with progressive pigmented purpura.

Pathogenesis

Purpura fulminans is an acute vasculopathy that is characterized by dermal intravascular thrombosis (Fig. 20.24) and DIC. An acquired or inherited clotting abnormality is often present (e.g., homozygous protein C deficiency, homozygous protein S deficiency, antithrombin III disorder). Purpura fulminans is often triggered by an acute infection (e.g., *N. meningitidis, Streptococcus pneumoniae*), or it may occur during the postinfectious convalescent phase (e.g., varicella, scarlet fever). Meningococcemia is the most common cause, but some cases of purpura fulminans are idiopathic.

Clinical Features

- Early lesions consist of painful, well-defined purpura surrounded by a thin erythematous border. Small lesions may resemble the palpable purpura of LCV (Fig. 20.25).
- Lesions progress to vesicles or bullae that may be hemorrhagic and may result in an eschar that is later sloughed.
- Resultant ulcers may extend to muscle and bone and can produce gangrenous digits (Fig. 20.26).

Diagnosis

- The occurrence of unexplained purpura, especially painful purpura, in the setting of acute infection or in a postinfectious state suggests purpura fulminans.
- A CBC, including platelet count, is necessary.
- Blood cultures are necessary to exclude meningococcemia.
- Decreased prothrombin time (PT) and partial prothromboplastin time (PTT), elevated fibrin degradation products, and reduced protein C, protein S, and antithrombin III levels can indicate DIC.
- A 3- or 4-mm punch biopsy of lesional skin should be performed and bisected, with one-half sent for tissue culture.
- Biopsies typically demonstrate dermal and subcutaneous vascular thrombosis, with little inflammation and with secondary hemorrhagic necrosis. Biopsies are consistent with purpura fulminans but are not diagnostic because other causes of thrombosis cannot be excluded without clinicopathologic correlation.

Treatment

- Immediate respiratory and hemodynamic support are needed.
- Intravenous antibiotics are necessary immediately after blood cultures and tissue cultures are obtained. Ceftriaxone is a common choice, but selection of an antibiotic is dictated by the suspected pathogenesis.
- The patient should be admitted to the hospital for definitive therapy with fresh frozen plasma (10–20 mL/kg q6–12h) and/or protein C concentrate to correct depressed levels of protein S, protein C, and antithrombin III. Fresh-frozen plasma can later be replaced with low molecular weight heparin.

Clinical Course

Some centers have reported mortality rates for purpura fulminans between 25% and 50%. Of patients who survived the disease, over 50% required amputation of one or more digits or even amputation of an entire extremity.

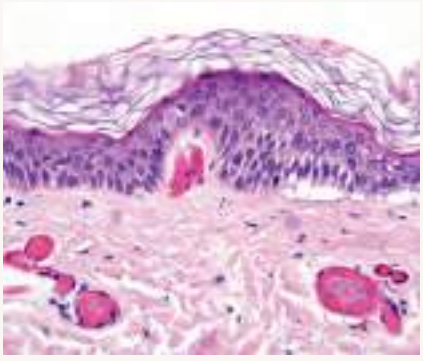

Fig. 20.24. Acute noninflammatory thrombosis in a patient with purpura fulminans.

Fig. 20.25. Patient with purpura fulminans demonstrating acute hemorrhagic lesions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.26. Patient with late-stage purpura fulminans due to meningococcemia. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Cryoglobulinemia ICD10 code D89.1

Pathogenesis

Cryoglobulinemia refers to a disorder caused by circulating single or mixed immunoglobulins that may precipitate in the vasculature of the skin or other organs at a temperature lower than normal body temperature. Cryoglobulins may be essential (idiopathic) or may be associated with an underlying disorder, such as a lymphoproliferative condition, collagen vascular disease, or infection (hepatitis C). Cryoglobulinemia is typically divided into three groups (Brouet classification) based on composition:

- Type I cryoglobulinemia—monoclonal immunoglobulin (IgM, IgG, IgA, light chains). This is caused by a lymphoproliferative disorder.
- Type II cryoglobulinemia—monoclonal immunoglobulin combined with polyclonal immunoglobulin (usually IgM, rarely others). This pattern is seen in lymphoproliferative disorders, collagen vascular diseases, and infection.
- Type III cryoglobulinemia—polyclonal immunoglobulin complexed with another polyclonal immunoglobulin. This pattern is often seen in collagen vascular diseases and infection.

Meltzer Triad

- Palpable purpura
- Arthralgia
- Myalgia (weakness)

Although the Meltzer triad (above) is classically seen in cryoglobulinemia (usually types II and III), similar symptoms can be seen in vasculitis.

Clinical Features

- Cryoglobulinemia usually affects adult and geriatric patients.
- Cryoglobulinemia often yields palpable purpura on the lower extremity (Fig. 20.27). A history of the condition being triggered by cold exposure is not always present.
- Less common cutaneous manifestations include erythematous macules, livedo reticularis (net-like macular lesions), cold-induced urticaria, ulcers, Raynaud phenomenon, acrocyanosis, and pernio-like lesions.
- Systemic manifestations include arthralgias, myalgias, abdominal pain, neuropathy, pulmonary disease, and renal disease, which may vary from mild proteinuria to acute renal failure.

Diagnosis

- The cutaneous manifestations of cryoglobulinemia are nonspecific. The differential diagnosis includes small vessel vasculitis, RMSF, and other purpuric disorders.
- A 3- or 4-mm punch biopsy for routine histologic examination should be done in all cases and, although not usually singularly diagnostic, the histologic findings can be strongly supportive of the diagnosis. An additional punch biopsy for direct immunofluorescence may be useful to exclude frank vasculitis.
- Laboratory studies for rheumatoid factor serve as a surrogate marker for types II and III cryoglobulinemia.
- Serum cryoglobulin levels can be measured. Anticoagulants can interfere with the detection of cryoglobulins, but this modality is still the diagnostic test of choice.

Treatment

- Treatment of the underlying condition, if possible (e.g., hepatitis C, lymphoma), usually improves cryoglobulinemia.
- Nonsteroidal antiinflammatory drugs (NSAIDs) are useful for the symptomatic relief of arthralgias and myalgias.
- Immunosuppressive drugs that decrease immunoglobulin levels (e.g., cyclophosphamide) may be used, and plasmapheresis (Figs. 20.28 and 20.29) or rituximab may be used in severe cases.

Clinical Course

The mortality rate depends on the underlying cause, but fully developed cryoglobulinemic syndrome has a mortality rate of up to 14%.

Fig. 20.27. Patient with cryoglobulinemia demonstrating palpable purpura and ulcerations. The patient had underlying chronic lymphocytic leukemia that was the cause of the cryoglobulins. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.28. Cryoglobulins removed by plasmapheresis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.29. Same location as depicted in Fig. 20.27 demonstrating response to removal of cryoglobulins by plasmapheresis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Cryofibrinogenemia ICD10 D89.2

Pathogenesis

Cryofibrinogenemia is caused by cryoproteins comprised of an admixture of fibrinogen, fibrin, fibronectin, and fibrin degradation products. These cryoproteins can be detected in refrigerated plasma but not in refrigerated serum. Cryofibrinogenemia can be primary or secondary, with most cases being associated with malignancy, infection, collagen vascular disease, endocrine disorders, and medications (e.g., oral contraceptives). Cryofibrinogens can be detected in about 5% of the population. It is also important to understand that patients may have cryofibrinogens and cryoglobulins.

Clinical Features

- Patients with cryofibrinogenemia may complain of general cold intolerance.
- Following cold exposure, cutaneous manifestations usually consist of petechiae, large areas of purpura (Fig. 20.30), and variable necrosis of the skin (Fig. 20.31).
- Other cutaneous manifestations include Raynaud phenomenon, pernio-like lesions, and livedo reticularis.
- In severe cases, there can be erosions, ulceration, and gangrenous digits that may require amputation.
- Systemic occlusion of vessels in other organ systems (e.g., stroke) can occur. Arthralgias, the second most common complaint, after skin disease, occur in about 30% of patients.

Diagnosis

- Cryofibrinogenemia should be suspected in any patient with a history of cold intolerance and purpuric lesions that are acral or appear cold-induced.
- The diagnosis is based on the demonstration of cryofibrinogens. Testing for cryoglobulins should be commissioned at the same time, because both conditions can be present in the same patient.
- A 3- or 4-mm punch biopsy of lesional skin can demonstrate histologic features consistent with the diagnosis but cannot exclude other causes of vascular thrombosis.

Treatment

- Treatment of the primary disorder (e.g., a malignancy), if possible, may improve cryofibrinogenemia.
- Cold avoidance is useful in all patients, as is removal of other vasoconstricting medications. Cessation of smoking can be helpful.
- Low-dose aspirin is usually recommended, sometimes combined with low-dose oral prednisone.
- Stanozolol (2–4 mg PO qd) has been used anecdotally because of its fibrinolytic properties.
- Severe cases may require the use of immunosuppressive drugs, such as azathioprine and chlorambucil.

Clinical Course

The prognosis in cryofibrinogenemia is usually quite favorable, and many patients will spontaneously go into remission. In one study, the mortality rate was only 5%.

Fig. 20.30. Acute cryofibrinogenemia on the lower legs that occurred with intense cold exposure while the patient was in a wheelchair. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.31. Patient with severe cryofibrinogenemia, with hemorrhage and necrotic changes of the penis. This occurred after passing out in cold weather after an alcoholic binge.

Pathogenesis

Pernio is a distinct clinical reaction to modest cold injury that affects small blood vessels. It is usually seen in cold climates with higher humidity (so-called "English winter") and is not often seen in severely cold (and dry) climates. Histologically, pernio consists of a dense perivascular infiltrate of lymphocytes directed against an unknown antigen. The mechanism for this abnormal reaction is unknown, but in one study of children with pernio, half demonstrated positive cryoglobulin levels or cold agglutinins. Two of the patients with cryoproteins also demonstrated a positive test for rheumatoid factor.

Clinical Features

- Patients usually have a history of recent cold exposure, typically in the past 1 to 7 days. The exposure may seem trivial (e.g., walking the dog on a cold day), but pernio does not have be caused by brutal cold.
- Pernio typically presents with mildly to moderately painful, 1- to 10-mm purple papule(s) on the distal toes (Figs. 20.32–20.34).
- Usually lesions are bilateral; rarely lesions are unilateral.
- The overlying epidermis may yield a blister, or even a hemorrhagic blister, in severe cases of pernio.

Diagnosis and Evaluation

- Patients with connective tissue disease, especially lupus erythematosus, may develop lesions clinically identical to those of pernio (chilblain lupus). Therefore, connective tissue disease should be excluded in all patients with pernio.
- The differential diagnosis includes hypersensitivity vasculitis (often excluded by distribution), cryoglobulinemia, cryofibrinogenemia, and hypergammaglobulinemia.
- Relevant laboratory studies include measurement of cryoglobulins, cryofibrinogens, cold agglutinins, ANA, ENA, and rheumatoid factor levels.
- A biopsy is usually unnecessary, but atypical presentations can be confirmed with a small (3-mm punch) biopsy. The biopsy must extend into the subcutaneous fat.

Treatment

- Prevent or limit cold exposure.
- Nonsteroidal antiinflammatory drugs (NSAIDs) are often used in the treatment of a single episode, although there are no clinical trials demonstrating efficacy.
- Pentoxifylline (400 mg PO tid) for 3 weeks has been shown to be superior to placebo in a double-blind placebo-controlled study.
- Nifedipine (5 mg PO qd), titrated upward in 5-mg increments to an effective or maximum tolerated dose (usually 20–60 mg), is an excellent choice for treating chronic pernio.

Clinical Course

The individual lesions usually last 2 to 4 weeks and heal without scarring. Some patients may have only a single episode of pernio, whereas other patients develop recurring episodies that can be debilitating.

Fig. 20.32. Pernio demonstrating hemorrhagic blisters with brownish tints on the toes of a pediatric patient. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.33. Patient with severe crusted pernio with violaceous tints. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.34. Patient with large hemorrhagic lesion of the distal toe. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Pityriasis Lichenoides et Varioliformis Acuta (Mucha-Habermann Disease) ICD10 code L41.0

Pathogenesis

Pityriasis lichenoides et varioliformis acuta (PLEVA) is a relatively uncommon disorder of unknown pathogenesis. Some studies have demonstrated that up to 57% of cases of PLEVA may demonstrate a monoclonal T-cell population by PCR-based studies. In this regard, it has been proposed that PLEVA is a benign clonal T-cell dyscrasia. Rare cases of PLEVA are associated with HIV, parvovirus B19, and staphylococcal infection.

Clinical Features

- PLEVA usually presents in children, with most cases occurring in those 2 to 14 years of age. Adolescents and young adults may also develop PLEVA.
- Primary lesions are round to oval hemorrhagic papules, from 2 to 10 mm in size (Fig. 20.35). Less often, the lesions appear vesicular during early evolution.
- Multiple skin lesions in different stages of development (crops) are characteristic of PLEVA.
- With time the lesions of PLEVA mature and may become crusted, ulcerated, or scaly (Figs. 20.36 and 20.37).
- The number of lesions is variable, but most patients with PLEVA have 10 to 50 lesions.
- PLEVA usually affects the trunk and proximal extremities, but some cases may involve the face and distal extremities. Rare cases demonstrate nonspecific oral erythema or erosions.
- Symptoms vary from none to mild burning or pruritus.
- Rare cases may present with fever and large ulcerative lesions that cover large areas of the body.
- Ulcerative lesions may scar.

Diagnosis

- A child or young adult with hemorrhagic lesions and eschars, mostly in a central distribution, and with lesions in various stages of development, suggests the possibility of PLEVA. Another consideration, however, is varicella infection.
- Atypical cases or cases in adults should be confirmed with a 3- or 4-mm punch biopsy taken from an early lesion. The histologic findings can be strongly supportive, or in some cases, diagnostic.

Treatment

- PLEVA is usually self-limited, and no treatment is required. There have been no randomized placebo-controlled trials regarding therapy.
- Anecdotal success has been reported with oral antibiotics, including erythromycin and doxycycline. Most case reports and case series employed erythromycin.
- Other treatments include ultraviolet (UV) light therapy (narrow-band UVB, UVA, and psoralen with UVA [PUVA]), oral retinoids, methotrexate, and oral corticosteroids.

Clinical Course

In most cases, the skin lesions of PLEVA disappear in 1 to 10 months, although in some persons the condition may wax and wane for years. These circumstances are often called pityriasis lichenoides chronica (PLC). In general, patients with PLC manifest lesions that are less hemorrhagic but have more scale.

Fig. 20.35. Patient with pityriasis lichenoides et varioliformis acuta demonstrating scattered purpuric lesions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.36. Pityriasis lichenoides et varioliformis acuta in an adult showing purpuric and crusted lesions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 20.37. Close-up view demonstrating admixture of hemorrhagic and crusted lesions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 21
Sclerosing and Fibrosing Disorders

Key Terms

Scleroderma
- Progressive systemic sclerosis

Scleredema
- Scleredema adultorum
- Scleredema of Buschke

Sclerosing and Fibrosing Disorders: Partial Differential Diagnosis
- Localized scleroderma (morphea)
- Limited scleroderma (CREST syndrome)
- Systemic scleroderma
- Drug-induced sclerosis (e.g., bleomycin)
- Eosinophilic fasciitis
- Graft-versus-host disease
- Mixed connective tissue disease
- Morphea
- Nephrogenic systemic fibrosis
- Porphyria cutanea tarda
- Progressive systemic sclerosis
- Scleredema
- Scleromyxedema

Sclerosing and fibrosing disorders manifest as a hardening or induration of the skin due to the overproduction (fibrosis) and/or thickening (sclerosis) of collagen bundles. Sometimes, organ systems beyond the skin may be affected. Causes include collagen vascular disease and drugs, the latter taken orally or injected.

IMPORTANT HISTORY QUESTIONS

Do you have a history of cold intolerance in your fingers or known Raynaud phenomenon?

This is an important question because systemic scleroderma, limited scleroderma (formerly CREST syndrome [*c*alcinosis, *R*aynaud phenomenon, *e*sophageal dysmotility, *s*clerodactyly, and *t*elangiectasia]), and mixed connective tissue disease (MCTD) can present first in the skin, and the presence of Raynaud phenomenon may be an indication to pursue additional investigation.

Have you noticed swelling in your hands?

Swelling or edema of the hands—puffy hands—can be an early sign of evolving limited or systemic scleroderma or MCTD.

Do you have any difficulty in swallowing solid foods?

Dysphagia can be seen in those with systemic or limited sclerosis or MCTD.

What medications do you take?

This is an important question because some disorders, such as drug-induced sclerosis, eosinophilic fasciitis, and Texier disease, can be drug induced. Texier disease is not discussed in this chapter, but it produces a morphea-like or localized fasciitis-like syndrome at the site of vitamin K injection.

Have you had any recent infections?

Some cases of eosinophilic fasciitis occur after a recent streptococcal or viral infection.

Do you have any other medical conditions?

Other medical conditions of interest include diabetes and multiple myeloma (associated with scleredema). A history of bone marrow transplantation could suggest sclerodermatous graft-versus-host disease.

Have you had any gadolinium-enhanced magnetic resonance imaging (MRI) studies?

Most patients have gadolinium-enhanced MRI studies without consequence, but nephrogenic systemic fibrosis can occur in patients administered these agents in the presence of significant renal disease.

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the fibrosis?

Clinically observed fibrosis or sclerosis can be localized (morphea), confined to limited areas (CREST syndrome, eosinophilic fasciitis), or generalized (systemic scleroderma, generalized morphea, MCTD, or nephrogenic systemic fibrosis).

Are there any other types of skin lesions?

Matlike telangiectasias are often seen on the oral mucosa, face, neck, upper chest, and palms in limited scleroderma (CREST syndrome) but may occur also in systemic scleroderma and MCTD. Also, periungual telangiectasias, often best visualized with an ophthalmoscope, are a feature of limited and systemic scleroderma and MCTD.

Are there any changes in skin color?

Hyperpigmentation of the skin is a feature observed in systemic scleroderma, localized scleroderma (morphea), and eosinophilic fasciitis.

Morphea ICD10 code L94.0

Pathogenesis

Morphea is a localized abnormality of thickened collagen bundles in the dermis and sometimes in the subcutis. In Europe and Japan, *Borrelia burgdorferi* DNA has been detected in some biopsies of morphea, suggesting a possible role in pathogenesis, but this has been disputed, and it is not a feature of most cases in the United States. Importantly, morphea is a cutaneous-limited form of collagen vascular disease. Although some experts have promoted the term *localized scleroderma,* many dermatologists prefer retention of the older term to distinguish it from localized and systemic scleroderma, in which consequences beyond the skin are realized. About one-third of patients with morphea are positive for antinuclear antibody (ANA), usually in low titer. Morphea can also occur in the radiation field after treatment of breast cancer.

Clinical Features

- Morphea is more common in women than men (M:F = 3:1) and, although it can occur at any age, it is most common in children, adolescents, and young adults.
- The primary early lesion of morphea is an erythematous to violaceous plaque of variable size, but, in some patients, the inflammatory stage is not observed.
- The trunk and proximal extremities are affected most often.
- Plaque size varies from millimeters to larger than 20 cm.
- As lesions of morphea progress, the center becomes white or yellow-white and indurated, with a violaceous peripheral edge (so-called "lilac ring"; Fig. 21.1).
- Mature lesions lose the lilac ring and, instead, manifest with discoloration, ranging from tan to brown (Figs. 21.2 and 21.3) to white (Fig. 21.4) or even yellow-white.
- Mature lesions may demonstrate depression in relation to the surrounding skin (see Fig. 21.3).
- Most patients are asymptomatic, although mild pruritus may be present.
- Clinical variants include the following:
  - Guttate morphea—multiple to numerous small lesions
  - Linear morphea—linear plaques, often across joint spaces, which may hinder movement
  - Hemifacial atrophy *(coup de sabre)*—a linear form that affects the heads of children or adolescents, yielding facial asymmetry and scarring hair loss
  - Bullous morphea—a rare variant characterized by occasional intermittent blisters
  - Morphea with lichen sclerosus–like changes—the indurated findings of morphea, but with an overlying porcelain white or slightly blue-white color
  - Generalized morphea—involves most of the skin

Diagnosis

- The diagnosis of morphea can usually be made on clinical grounds, with a classic indurated oval or linear plaque, but if an early lesion has a lilac ring, the diagnosis is even more certain.
- Unusual presentations or atypical variants may require a punch biopsy (typically, 4, 5 or 6, mm) or incisional biopsy that includes fat. A shave biopsy is inappropriate to establish the diagnosis of morphea.

Treatment

- No treatment is an option for limited and asymptomatic disease because most cases spontaneously resolve.
- Both psoralen with UVA light (PUVA) or UVA1 phototherapy have limited availability but are probably the treatments of choice.
- If phototherapy is not an option, potent topical corticosteroids, such as clobetasol, or topical calcipotriene 0.005% applied bid, may yield benefit.
- Patients with linear morphea that crosses a joint space should be referred for physical therapy.

Clinical Course

Most patients demonstrate gradual improvement, and even resolution, over a period of 3 to 5 years. Atrophy may not resolve in all cases, even if the inflammation and progression are halted. Patients with localized variants of morphea are not more likely to develop systemic scleroderma.

Fig. 21.1. Patient with early lesion of morphea demonstrating central area of thickened collagen and a lilac rim of discoloration. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 21.2. Patient with multiple brownish lesions of morphea on the back. The lesion on the right lower back is brownish-red, indicating an actively inflamed lesion.

Fig. 21.3. Patient with long-standing brownish indurated plaque that has retracted. The white areas represent lichen sclerosis et atrophicus (LS&A)-like areas. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 21.4. Patient with long-standing morphea with hypopigmented surface reflecting lichen sclerosis et atrophicus (LS&A)-like changes.

Pathogenesis

Systemic scleroderma, also known as progressive systemic sclerosis, the most severe form of scleroderma, is an autoimmune collagen vascular disease that is characterized by thickening of collagen bundles. As the name implies, systemic scleroderma causes vascular changes in multiple organ systems. Numerous autoantibodies have been identified in systemic scleroderma, including antinuclear antibodies (anti–topoisomerase I, anti–RNA polymerase I and III), anti–fibrillin I, and autoantibodies directed against endothelial cells. The pathogenesis of systemic scleroderma remains poorly understood.

Clinical Features

- Systemic scleroderma is more common in women than men (M : F = 3 : 1).
- Raynaud phenomenon is a frequent early manifestation (~70% of patients).
- In early disease, there may be edema of the hands, which can progress into so-called bound-down sclerosis.
- In systemic scleroderma, sclerotic changes eventually involve most of the skin and may produce so-called stovepipe extremities, with shiny, taut skin (Fig. 21.5) that can impair joint mobility.
- As the disease progresses, other cutaneous manifestations include periungual telangiectasias, mat-like telangiectasias of the oral mucosa or skin, hyperpigmentation or hypopigmentation (Fig. 21.6), nail dystrophy, digital infarcts (Fig. 21.7), and calcinosis cutis (Fig. 21.8).
- Patients may also develop ulcers that are most common overlying joints but can develop anywhere.
- Patients usually develop a characteristic facies, with shiny taut skin and restricted opening of the mouth.
- Other organ systems, including the lungs, heart, kidneys, and gastrointestinal tract, may be affected.

Diagnosis

- Systemic scleroderma should be suspected in a patient with Raynaud phenomenon and edema of the extremities (puffy hands). Some cases can be difficult to differentiate from limited scleroderma (CREST syndrome), diffuse morphea, and mixed connective tissue disease.
- A 3- or 4-mm punch biopsy can be performed on involved skin. The histologic features are usually strongly supportive of the diagnosis.
- A screening ANA test will be positive in about 95% of cases. All cases should have complete panels carried out to look for specific autoantibodies associated with systemic sclerosis.
- Other initial laboratory studies include a complete blood count (CBC) with differential and baseline chemistry studies; these should include renal function, liver function, C-reactive protein, erythrocyte sedimentation rate (ESR), and urinalysis.
- A baseline x-ray of the hands is useful in documenting calcinosis and for later comparison.

Treatment

- The treatment of this systemic disease is beyond the scope of this text. No treatment is uniformly effective in all patients, and some treatments are controversial. Patients should be referred to specialists with expertise in this disease.
- Systemic treatments include D-penicillamine, minocycline, methotrexate, and cyclosporine.
- Calcium channel blockers may be used for Raynaud phenomenon. Antiplatelet drugs (e.g., aspirin) and antiphosphodiesterase inhibitors (e.g., sildenafil, tadalafil) may also be used. Gloves, socks, and avoidance of provocation by cold temperatures are important.
- Vasodilators, such as iloprost, epoprostenol, and treprostinil, or endothelin receptor blockers, such as bosentan and ambrisentan, may be useful for severe disease or systemic compromise.
- Phototherapy, particularly with UVA1 (340–400 nm), may soften affected skin.
- Statins may be of limited benefit due to antiinflammatory and immunomodulatory properties.

Clinical Course

Despite treatment, the 10-year survival rate is only 65% to 80%, with death usually caused by pulmonary, renal, and cardiac complications.

Fig. 21.5. Progressive systemic sclerosis in a young lady demonstrating fibrotic tightly bound-down shiny skin of the arms. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 21.6. Marked sclerodactyly with nail dystrophy and hypopigmentation in a patient with progressive systemic sclerosis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 21.7. Digital infarcts on the tip of the finger in a patient with progressive systemic sclerosis and severe Raynaud phenomenon. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 21.8. Perforating calcinosis cutis on the knuckle of a patient with progressive systemic sclerosis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Limited Scleroderma (CREST Syndrome) ICD10 code M34.1

Pathogenesis

Limited scleroderma (formerly known as CREST syndrome) is a collagen vascular disease with a presentation that is slightly less diffuse, and less fulminant, than systemic scleroderma. The term *CREST syndrome* is still preferred by some dermatologists. Patients typically have a positive ANA, with most patients demonstrating anticentromere antibodies (50–90%). There is an association between CREST syndrome and primary biliary cirrhosis.

Clinical Features

- Limited scleroderma typically presents in adults.
- As the CREST acronym implies, limited scleroderma has five main features:
  - Calcinosis cutis—firm, white to yellow-white discrete deposits that occur late in the disease process and is common on the elbows and hands. In some cases, the lesions of calcinosis cutis may erode, ulcerate, or even extrude calcium (Fig. 21.9).
  - Raynaud phenomenon—usually presents early in the disease process and may be the first manifestation (Fig. 21.10).
  - Esophageal dysmotility—difficulty swallowing food, with a sensation of getting stuck, or even with chest discomfort.
  - Sclerodactyly—edematous fingers that may become erythematous, with a tightening of skin over the finger dorsum and limited joint mobility. In severe cases, there may be distal digital infarcts or even infarcted whole digits (Fig. 21.11).
  - Telangiectasias—presents as mats of dilated blood vessels and tend to involve the oral mucosa, face, neck, upper chest, and palmar surfaces of the hands (Fig. 21.12).
- Although most patients do not demonstrate systemic involvement, a subset may develop pulmonary hypertension.

Diagnosis

- In early cases, patients may have only Raynaud phenomenon and hand edema, and a high index of suspicion is needed to investigate the diagnosis. Once all the features of CREST are in place, it is a relatively easy clinical diagnosis to make.
- Biopsies are not usually required to establish the diagnosis; finger biopsies may be ill advised because digits already affected by sclerodactyly may not heal.
- A screening ANA is required, with particular evaluation for anticentromere and anti–topoisomerase I (Scl-70) antibodies. The presence of antitopoisomerase antibodies favors full systemic sclerosis because it is identified in only 10% of patients with limited scleroderma (CREST syndrome).

Treatment

- No treatment is uniformly effective, and the disease tends to be slowly progressive.
- Raynaud disease and esophageal dysmotility can be managed with drugs directed at these symptoms (see earlier, "Scleroderma").
- Calcium deposits that inhibit hand function are usually amenable to removal by a hand surgeon.
- Some patients are treated with oral corticosteroids, D-penicillamine, and methotrexate, but these agents are used for more often systemic scleroderma.

Clinical Course

Limited scleroderma is a chronic but slowly progressive condition. Importantly, patients usually do not usually expire from the disease.

Fig. 21.9. Patient with calcinotic cutis, with eroded hard yellowish-white plaque of dystrophic calcium on the elbow. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 21.10. Severe cyanosis from Raynaud phenomenon. The patient was seen smoking outside the clinic after this visit. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 21.11. Patient with severe sclerodactyly and a partially gangrenous digit, which had to be amputated. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 21.12. Matlike telangiectasia on the neck and upper chest in a patient with CREST syndrome. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Eosinophilic Fasciitis ICD10 code M35.4

Pathogenesis

Eosinophilic fasciitis (EF) is a disorder characterized by inflammation and thickening of the collagen bundles of the superficial fascia overlying muscle, with variable extension of the process into the fibrous septae of the lower subcutaneous tissue. The pathogenesis is poorly understood although, in some patients, the process is precipitated by exertion. An epidemic of an eosinophilic fasciitis–like syndrome (eosinophilia-myalgia syndrome) was linked to the oral intake of L-tryptophan with unknown trace contaminants and also to contaminated rapeseed oil.

Clinical Features

- EF can involve persons of any age but is most common in 40- to 50-year-olds.
- Initial manifestations of EF include increased and diffuse edema of the extremities.
- As EF matures, a *peau d'orange* appearance and marked induration of affected areas ensues.
- Brawny induration usually spares the areas around superficial veins, producing a so-called groove sign or superhero sign, with exaggerated definition of muscle groups (Fig. 21.13).
- Variable focal hyperpigmentation can develop in EF during its later stages (Fig. 21.14).
- Rare patients with EF may develop focal morphea-like changes that confound the diagnosis.
- Most EF patients do not demonstrate systemic manifestations, but noncutaneous consequences can include joint contracture (Fig. 21.15), carpal tunnel syndrome, muscle weakness, arthralgias, arthritis, and pulmonary symptoms.

Diagnosis

- Edema, *peau d'orange* changes to the skin, and woody induration confined to the extremities, without Raynaud phenomenon, should suggest EF. The ability to pinch overlying skin easily is a feature of eosinophilic fasciitis that is not seen in systemic scleroderma or diffuse morphea. The presence of a "groove sign" or "superhero sign" also supports the diagnosis of EF.
- To be useful in diagnosis, an incisional biopsy must extend to the superficial muscle. Biopsies that are too superficial are not uncommon. Hence, when EF is suspected, the biopsy should be done by a clinician who is comfortable doing biopsies that extend into muscle.
- MRI can be used to detect fascial thickening and may even suggest a high-yield area for biopsy.
- Laboratory studies that support the diagnosis include a CBC (will usually demonstrate peripheral eosinophilia in 60% of cases), elevated ESR, and hypergammaglobulinemia (seen in 50% of cases).

Treatment

- Oral prednisone (20–60 mg/day for at least 1 month) is often used and is gradually tapered based on the clinical response.
- Other steroid-sparing agents include oral hydroxychloroquine, cyclosporine, and sulfasalazine.
- Patients with joint contractures should be referred to physical therapy.

Clinical Course

Approximately 80% of patients with EF will experience moderate to considerable improvement with therapy, but most patients continue to have some residual disease, even after effective treatment. Some patients experience only slight improvement, or no improvement at all, even with aggressive management.

Fig. 21.13. Eosinophilic fasciitis in a 30-year-old soldier that developed after strenuous physical activity. In addition to induration, this case demonstrates the groove sign. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 21.14. Patient with late-stage eosinophilic fasciitis showing a woody indurated thigh, with focal faint hyperpigmentation.

Fig. 21.15. Loss of joint flexibility in a patient with eosinophilic fasciitis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Scleredema ICD10 code M34.9

Pathogenesis

Scleredema, also known as scleredema of Buschke and scleredema adultorum, is a rare disorder characterized by thickening of the collagen and variable mucin deposition in the skin or other organs. The condition usually occurs in adults with diabetes, but it may also occur after an infection (including streptococcal and viral infections). This infection-associated variant is more common in children and young adults. Scleredema can also be associated with malignancy, or it may be idiopathic. The mechanism(s) that produces these distinctive changes in the dermis are unknown.

Clinical Features

- The neck and upper back are usually affected in diabetes-associated cases, and this form is most common in obese men. In such cases, type 2 diabetes has usually been present for years, or even decades, and the patient is usually insulin-dependent.
- In cases associated with infections, the onset is usually more abrupt, and disease is more likely to involve the face, neck, and upper chest. Children and young adults are usually affected.
- Rarely, a generalized variant that involves most of the body can occur.
- The skin is usually normally colored, or mildly erythematous, with an indurated quality (Figs. 21.16 and 21.17). The overlying skin usually cannot be pinched.
- In some cases, the skin demonstrates a puckered appearance, and this is especially common on the extremities or in the pelvic region.
- Some patients may report difficulty swallowing or protruding the tongue, which is thought to be related to restriction of muscle movement by thickened collagen.

Diagnosis

- The diagnosis is usually established based on clinical findings, particularly in the diabetes-related variant common in adults.
- In select cases, a 4- to 6-mm punch biopsy or incisional biopsy, to fat, may be necessary. Characteristically, if scleredema is present, it is difficult to suture the wound.
- Because some cases are associated with multiple myeloma, serum protein electrophoresis should be considered as a screening modality.

Treatment

- No treatment is uniformly effective in all patients. If the patient is not troubled by the condition, treatment is not required.
- Both PUVA or UVA1 phototherapy can be partially effective in some cases.
- Electron beam therapy has been used successfully in severe cases, but there are many long-term side effects to consider before using this modality.
- Patients with lesions that impair joints should be referred to physical therapy.

Clinical Course

In most cases, and particularly with the variant associated with diabetes, scleredema may last indefinitely and may even progress. In cases associated with infection, some patients will spontaneously improve over a period of months to years. In patients with scleredema associated with multiple myeloma, treatment of the plasma cell dyscrasia can yield significant improvement.

Fig. 21.16. Man with type 2 diabetes and markedly erythematous, firm, indurated plaque of the neck and upper back. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 21.17. Man with type 2 diabetes who presented for evaluation of pruritus. An excoriation is present on the left side of his back. The patient was obese and had not noted the erythema and marked induration of his neck and upper back until it was pointed out to him during the initial visit. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Nephrogenic Systemic Fibrosis ICD10 code M35.5

EXPOSURE RELATED

Pathogenesis

Nephrogenic systemic fibrosis (NSF) is a condition that was first identified in hemodialysis patients, with cutaneous lesions that resembled scleromyxedema clinically and histologically. Although the patient population affected (those with renal failure) was well recognized, the cause of the condition was unknown. It was discovered in 2006, through work done in part by one of the authors (WAH). Gadolinium, derived from materials used in contrast-enhanced MRI, was deposited in the tissue of persons with NSF. The deposition of this material is considered to be involved in the development of NSF, which causes indurated fibrotic skin, joint contractures, and even fibrosis of other organ systems, leading to morbidity and death.

Clinical Features

- NSF occurs in patients with significant renal disease and exposure to gadolinium-based contrast materials used in MRI.
- Hyperphosphatemia, co-administered erythropoietin, or iron supplementation, and even the particular chelating agent used in a specific brand of gadolinium contrast, are all probable cofactors in the development of NSF, but exposure to gadolinium is a common requisite element.
- NSF can begin weeks to months or, rarely, years after exposure to the contrast agent during a period of renal insufficiency.
- The skin develops a fibrotic indurated texture, a *peau d'orange* or pebbled appearance to the skin may ensue (Fig. 21.18), and the patient develops joint contractures and stooped posture and may even become wheelchair bound (Fig. 21.19).
- Fibrotic plaques may develop in some patients (Fig. 21.20).
- Some patients demonstrate characteristic yellow-white concretions in the sclera of their eyes (Fig. 21.21).

Diagnosis

- The diagnosis is based on clinical presentation, appropriate exposure history (gadolinium exposure during a period of renal insufficiency), and characteristic and supportive histologic changes on biopsy.

Treatment

- Treatment is difficult. Supportive measures for the joint contractures and loss of mobility are important.
- Antifibrotic agents, such as imatinib mesylate, have proven effective in some persons.
- Immunosuppressive agents are of limited use.
- Physical therapy may be useful for those with joint contractures.

Clinical Course

In 2006, the discovery of gadolinium in the tissue of persons with NSF marked a turning point in disease incidence. With recognition of the strong association between gadolinium exposure during renal insufficiency and the development of NSF and the improved screening for renal insufficiency prior to dosing these agents, the incidence of NSF decreased from about 40 to about 6 persons per 100,000 contrast-enhanced MRI examinations. The condition is now rarely seen as long as exposure to gadolinium-based agents is avoided in persons at risk of developing NSF.

Fig. 21.18. Patient with nephrogenic systemic fibrosis with marked induration of the leg, with a pebbled appearance.

Fig. 21.19. Severe induration of the leg resulting in the patient with nephrogenic systemic fibrosis becoming wheelchair-bound.

Fig. 21.20. Patient with lightly pigmented defined plaques of nephrogenic systemic fibrosis on an extremity.

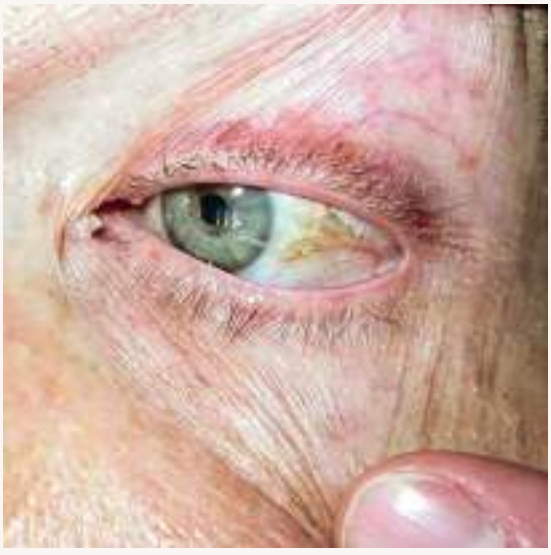

Fig. 21.21. Patient with characteristic yellowish scleral plaques of nephrogenic systemic fibrosis.

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Chapter 22
Atrophic Disorders

Key Terms

Striae
Stretch marks
Striae alba
Striae distensae
Striae gravidarum
Striae rubra

Atrophic Disorders: Partial Differential Diagnosis

- Acrodermatitis chronica atrophicans
- Anetoderma
- Aging—extrinsic (photoaging)
- Aging—intrinsic
- Aplasia cutis congenita
- Atrophic lichen planus
- Atrophic scar
- Atrophoderma of Pasini and Pierini
- Corticosteroid atrophy
- Focal dermal hypoplasia
- Follicular atrophoderma
- Lichen sclerosus et atrophicus (Chapter 27)
- Lipodystrophies
- Poikiloderma atrophicans vasculare
- Postinjection lipoatrophy
- Striae distensae

Atrophic disorders are a group of heterogeneous diseases characterized by an atrophic (thinned) epidermis, dermis, or subcutis. Some atrophic diseases affect the epidermis (e.g., photoaging, topical corticosteroid overuse), whereas others affect the dermis (atrophoderma from intralesional steroid injections). Although the term *atrophy* implies that the skin was once normal, some disorders in this disease group (see box) are actually congenital and are caused by hypoplasia (focal dermal hypoplasia), in which the skin is less fully formed, or by aplasia (aplasia cutis congenita), in which a particular layer of the skin was never formed.

IMPORTANT HISTORY QUESTIONS

When was this change in your skin noted?

This question is designed to distinguish congenital disorders (e.g., aplasia cutis congenita, focal dermal hypoplasia) from acquired disorders (e.g., photoaging, lichen sclerosus).

Over what period of time did these changes occur?

Some atrophic conditions foment quickly (e.g., striae distensae, anetoderma due to steroid injections) whereas others may develop over months, years, or decades (e.g., poikiloderma atrophicans vasculare, intrinsic aging, photoaging).

Have you used any steroids in the area, or have you had steroid injections or taken steroid pills?

Topical corticosteroids, especially potent forms, may thin the skin or produce striae. Localized atrophy may be caused by corticosteroid injections (intradermal or intramuscular). Even oral glucocorticosteroids, when taken in a higher dose and/or for extended durations, may lead to skin thinning and striae.

Have you been given any other injections in the area?

Injections of insulin, vaccines, antibiotics, of other injectable agents of any type may cause atrophy, especially if injected in the same area, for an extended duration, or with a suboptimal technique.

Do you have any other medical conditions?

Other medical conditions of interest include *Borrelia* infection (e.g., acrodermatitis chronica atrophicans, atrophoderma of Pasini and Pierini) and collagen vascular disease or cutaneous T cell lymphoma.

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the atrophy?

Many atrophic disorders have a characteristic distribution. For example, striae distensae (stretch marks) usually involve the axillae, abdomen, and upper thighs, whereas postinjection atrophy involves regions of the body where injections are delivered (e.g., upper arms, upper buttock, abdomen).

How large are the areas of atrophy, and how are they shaped?

Some forms of atrophy yield large lesions (e.g., atrophoderma of Pasini and Pierini), or cover large areas (e.g., photoaging). Other forms of atrophy are localized (e.g., postinjection atrophy).

Are there any changes in skin color?

Hypopigmentation may be seen in lichen sclerosus et atrophicus, atrophic scars, striae distensae, and atrophy due to corticosteroid injections; hyperpigmentation is more common in atrophoderma of Pasini and Pierini. Disorders with a hypoplastic or aplastic dermis may appear yellow due to visible fat.

Striae ICD10 code L90.6

Pathogenesis

Striae, also known as striae distensae or stretch marks, are linear atrophic areas of skin that are characterized by an absence of elastic fibers and altered collagen bundles. The pathogenesis has not been fully elucidated, but associations with rapid weight gain and steroid use suggest that more than one factor may be involved. Histologic evaluation and electron microscopy used on early lesions have demonstrated an inflammatory element, with mast cells and other inflammatory cells elaborating elastase and altering elastic fibers. Striae are seen with increased frequency in adolescents with rapid weight gain, pregnancy (striae gravidarum), and disorders with elevated systemic adrenocorticoid levels (Cushing disease) and with systemically administered corticosteroids. Striae may also be induced by topical corticosteroids.

Clinical Features

- Most striae occur in adolescents with rapid weight gain, during pregnancy, with administration of systemic corticosteroids, or with use of topical corticosteroids.
- The most frequently affected sites include the axilla, upper thighs, and lower back.
- Striae may be elevated, rather than depressed, and are often red in color (striae rubra) (Fig. 22.1). As any associated inflammation subsides, the lesions may become violaceous (Fig. 22.2) and may eventually develop a white color (striae alba; Fig. 22.3).
- Mature striae are linear, depressed, and may demonstrate a wrinkled cigarette paper–like surface.
- Striae gravidarum usually develop during the sixth and seventh months of pregnancy and often affect the lower abdomen (Fig. 22.4) and breasts. Incidence rates in pregnant women vary from 50% to 90%.

Cocoa Butter: Does It Prevent Striae?

No. Although studies have shown that more than 60% of pregnant women use cocoa butter or other so-called bio-oils to prevent stretch marks, there is no medical evidence that this works. In fact, in a large (210 women), double-blinded, randomized, placebo-controlled trial, cocoa butter did not prevent stretch marks.

Diagnosis

- The clinical diagnosis of striae is usually made easily and is often assessed by the patient.
- Rare spontaneous cases may require an endocrine evaluation to exclude Cushing disease or another disorder of excess adrenocorticoids.
- Biopsies do not have a role in the assessment of striae.

Treatment

- No specific treatment for striae is particularly effective.
- Iatrogenic cases are managed with withdrawal or reduction of topical or systemic corticosteroids.
- In early disease (striae rubra), some therapies may improve cosmesis, such as topical 0.1% tretinoin, but should not be used in pregnant or breastfeeding patients, mesotherapy (hyaluronic acid injected with a mesogun), microdermabrasion, and lasers (Nd:YAG).
- In select cases, surgical excision of isolated lesions may improve cosmesis.

Clinical Course

For most patients, once striae develop, they are permanent, because the skin has no way to reattach the disrupted elastic fibers. In the setting of striae induced by topical corticosteroid overuse, some patients may notice varied improvement with prompt removal of the offending agent(s).

Fig. 22.1. Acute onset of red striae in an adolescent with recent weight gain. (From the William Weston Collection, Aurora, CO.)

Fig. 22.2. Patient with massive violaceous striae due to oral corticosteroids and rapid weight gain. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 22.3. Patient with older striae with white and violaceous colors. This case was produced by a potent topical corticosteroid. (From the William Weston Collection, Aurora, CO.)

Fig. 22.4. Patient with striae gravidarum. Note the associated linea nigra of pregnancy.

Postinjection Lipoatrophy ICD10 code L90.8

Causes of Postinjection Lipoatrophy

Common Causes

- Benzathine penicillin
- Corticosteroids
- Insulin

Uncommon Causes

- Copolymer I
- Diphtheria, tetanus, and acellular pertussis (DTaP) vaccine
- Human growth hormone
- Iron dextran
- Methotrexate
- Vasopressin

Pathogenesis

Injection-related atrophy of the subcutaneous tissue is a well-recognized adverse reaction. The most common cause is the mistaken injection of corticosteroids into the subcutaneous tissue, rather than into the dermis or muscle. Other less frequent causes are listed in the box. In some cases, lipocytes are damaged by trauma and/or a host response to another injected material (e.g., insulin), whereas corticosteroids cause atrophy due to direct catabolic and metabolic effects.

Clinical Features

- Lipoatrophy usually develops 4 to 8 weeks after injection.
- Postinjection lipoatrophy usually occurs on the upper arms (Fig. 22.5), upper lateral buttock (Fig. 22.6), and abdomen, which corresponds with areas often used for medical injections.
- The primary lesion consists of a depressed area of skin, with loss of subcutaneous fat. Significant inflammation is usually absent.
- The depression may be skin-colored (see Fig. 22.6) or may demonstrate hypopigmentation due to corticosteroid injection (Fig. 22.7; see Fig. 22.6).
- In rare cases, when the skin is pulled taut, the injected corticosteroid may be identified as white concretions (see Fig. 22.7).

Diagnosis

- In most cases, the diagnosis is made clinically via a history of an injection at the site.
- In rare cases, where the corresponding history is not forthcoming, or history of an injection is denied (see Fig. 22.7), a 4-mm punch biopsy may demonstrate material consistent with corticosteroid in the subcutis.

Treatment

- No treatment for postinjection atrophy is consistently effective.
- In rare cases, surgical fat transfer may improve cosmesis.

Clinical Course

The clinical course is unpredictable. Some patients demonstrate partial or even complete resolution over months or years, but for some patients the damage is permanent.

Fig. 22.5. Patient with multiple areas of depression due to atrophy of the subcutaneous fat caused by repetitive insulin injections.

Fig. 22.6. Patient with subcutaneous atrophy and hypopigmentation due to injected triamcinolone. This was supposed to be an intramuscular injection, but the triamcinolone was injected into the fat.

Fig. 22.7. Patient with subcutaneous atrophy and hypopigmentation due to injected triamcinolone. With the skin pulled taut, whitish triamcinolone could be visualized in the center of the lesion. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Aplasia Cutis Congenita ICD10 code Q48.8

Pathogenesis

Aplasia cutis congenita (APC) is an uncommon disorder (~3 cases/100,000 births) but is the most common cause of a congenital scarring alopecia. The mechanism is poorly understood, but the presence of familial cases of APC—autosomal dominant and autosomal recessive variants exist—suggests a genetic basis (OMIM 10760). In one family, the defect was linked to a mutation in the *BMS1* gene on chromosome 10. APC is also a component of several syndromes, including Johanson-Blizzard syndrome, Adams-Oliver syndrome, Wolf-Hirschhorn syndrome, epidermolysis bullosa, and trisomy 13. Intrauterine infection with herpes simplex virus and varicella-zoster virus has been implicated in some cases. Certain drugs, including cocaine, marijuana, valproic acid, methimazole, carbimazole, and misoprostol, have also been linked to the development of APC.

Clinical Features

- APC is present at birth.
- Most cases involve the vertex of the scalp (Figs. 22.8–22.10), usually just lateral to the midline (~70% of cases). Other sites less often involved include the back and extremities (Fig. 22.11).
- APC may be a solitary condition (70% of cases), or lesions may be multiple (30% of cases).
- Lesions of APC may be round or oval and linear or stellate and range in size from 0.5 cm to more than 10 cm.
- There may be absence of all skin or simply partial loss. Complete hair loss is usually present within atrophic areas.
- The surface may be shiny, with a thinned or scaly surface, or there may be an ulcer. In rare cases, the surface may appear bullous.
- Some lesions may demonstrate a so-called hair collar sign, with a ring of longer, darker hair that surrounds the area of hair loss (see Fig. 22.10). Patients with a hair collar sign are more likely to have underlying defects of bone or neurologic abnormalities (e.g., meningomyelocele, porencephaly).
- Patients may have underlying bony or neurologic defects.
- Some cases of APC have been associated with fetus papyraceus (so-called vanishing twin).
- Complications of APC include hemorrhage into the skin, bleeding, and infection.

Diagnosis

- The diagnosis is usually made on clinical grounds, with observation of focal scarring, devoid of hair, on the vertex of a newborn.
- Select cases should have imaging studies to evaluate for underlying bony or neural defects.

Treatment

- No treatment is required. Conservative intervention, particularly to promote healing when ulceration is present, includes topical petrolatum, silver sulfadiazine cream, or dressings that contain epidermal growth factor.
- Select cases can be treated with surgical intervention. Cases with underlying bone defects are best managed by a multidisciplinary team of neurosurgeons and plastic surgeons.

Clinical Course

APC is a permanent condition that will demonstrate mature scar with time. In most cases, any bone defects will spontaneously close.

Fig. 22.8. Patient with solitary lesion of ulcerated aplasia cutis congenita. (From the William Weston Collection, Aurora, CO.)

Fig. 22.9. Two lesions of aplasia cutis congenita on the scalp of an older child with the appearance of a scaly scar. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 22.10. Close-up of aplasia cutis congenita on the scalp of a patient demonstrating a hair collar sign. (From the William Weston Collection, Aurora, CO.)

Fig. 22.11. Patient with large lesion of aplasia cutis congenita on the leg. (From the William Weston Collection, Aurora, CO.)

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Chapter 23
Follicular Disorders

Selected Follicular Disorders

Common

- Acne vulgaris
- Dermatophytic folliculitis
- Drug-induced acneiform disorders
- Keratosis pilaris
- Neonatal acne
- *Pityrosporum* folliculitis
- Rosacea
- Staphylococcal folliculitis

Uncommon

- Eosinophilic folliculitis
- Follicular atopic dermatitis
- Follicular mycosis fungoides
- Lichen spinulosus
- Perioral dermatitis
- Pseudomonal folliculitis
- Viral folliculitis

Follicular disorders represent pathologic processes that alter or otherwise inflame the pilosebaceous (follicular) unit. Alopecias are also follicular disorders but are considered elsewhere in this text. Numerous disorders can affect the follicle, including infections, disorders of keratinization, some neoplasms (e.g., follicular mycosis fungoides), genodermatoses, and other inflammatory disorders. The following questions are important to ask during the evaluation of follicular disorders.

IMPORTANT HISTORY QUESTIONS

How long has the follicular alteration been present?

It is helpful to determine if the condition is acute or chronic. For example, acne vulgaris, keratosis pilaris, and follicular atopic dermatitis are typically chronic disorders, whereas drug-induced acneiform eruptions and pseudomonal folliculitis are acute events.

Have you started any new medications in the past month?

This question is most relevant to drug-induced acneiform eruptions. Oral corticosteroids, androgens, isoniazid, lithium, and some birth control medications can cause medication-induced acne.

Are you putting anything on the skin of the affected area?

Many patients use home remedies, over-the-counter remedies, or even prescription remedies, which can worsen follicular disorders. For example, some patients with acne use comedogenic cosmetic products that aggravate the condition. Mistaken or misguided use of topical corticosteroids can also aggravate acne vulgaris and rosacea, cause perioral dermatitis, or complicate dermatophyte infections.

Have you recently used a hot tub or hot springs pool or had some other immersive water exposure?

This question is pertinent when the clinical differential diagnosis includes *Pseudomonas* folliculitis.

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the follicular disorder?

Some follicular disorders have characteristic distributions. Acne vulgaris usually involves the face and upper trunk, whereas rosacea is typically confined only to the face. *Pseudomonas* folliculitis is almost always truncal and is most prevalent beneath areas that were covered by a bathing suit.

Is there a distinct pattern to the dermatitis?

Some follicular disorders are grouped (e.g., lichen spinulosus) or dermatomal. Grouped erythematous follicle-situated papules or vesicles, in a dermatomal pattern, lead to consideration of herpes zoster.

Are other mucocutaneous findings present?

Some follicular disorders have other cutaneous findings that suggest the diagnosis. For example, rosacea often has background erythema, telangiectasias, or ocular findings, whereas pseudomonal folliculitis may be associated with mastitis, conjunctivitis, otitis externa, or pharyngitis.

Is a pustular component present?

Some follicular disorders, such as lichen spinulosus or follicular eczema, are almost never pustular, whereas staphylococcal folliculitis or pseudomonal folliculitis often demonstrate follicle-centered pustules.

Acute Vulgaris ICD10 code L70.0

Pathogenesis

Acne is a multifactorial disorder. Abnormal follicular maturation, in response to an altered hormonal milieu, leads to follicular plugging and retained sebum. This results in the overgrowth of a commensal bacteria called *Propionibacterium acnes.* The bacterium elaborates proinflammatory mediators, and follicular rupture leads to the liberation of proinflammatory free fatty acids into the dermis. The result is a classic "zit." Follicular plugging alone causes comedones (blackheads, whiteheads). This concept of acne as a multifactorial disorder is important because treatment may be directed against any of these contributing factors. Ergot, agents that prevent comedone formation, reduce sebum production, decrease bacterial growth, or blunt the proinflammatory response, may improve the condition.

Clinical Features

- Acne typically begins during puberty (after andrenarche).
- Acne is usually distributed on the face (most common site), neck, and upper chest or back.
- Acne typically causes the following:
  - Comedones (blocked pores), which may be open (blackheads; Fig. 23.1) or closed (whiteheads)
  - Erythematous follicle-based papules
  - Follicle-based pustules and nodules
  - Acneiform epidermoid cysts (see Fig. 34.2)
  - Scarring may develop at sites of marked follicular inflammation or follicular rupture; this may result in substantial residual pigmentary changes, particularly in persons with darker skin.

Diagnosis

- Acne is almost always a clinical diagnosis; often it has already been diagnosed by the patient.
- Women with male pattern hair growth on the face or genitals, early-onset alopecia, cliteromegaly, severe acne, and other signs of hirsutism warrant an endocrine evaluation.

Treatment

- Mild acne (primarily comedonal acne)
  - Mild comedonal acne can be treated with a topical retinoid or azelaic or salicylic acid.
  - Mild inflammatory acne with papular and/or pustular elements can be treated with a topical retinoid and topical benzoyl peroxide.
- Moderate acne (substantial comedones and/or a papular or pustular component)
  - This can be treated with topical retinoid plus benzoyl peroxide and/or a topical antibiotic (including combination agents with benzoyl peroxide and erythromycin or clindamycin).
  - This can be treated with a topical retinoid plus topical benzoyl peroxide plus an oral antibiotic. Topical or oral antibiotic monotherapy is not recommended for more than 12 weeks to prevent the development of bacterial resistance.
- Severe acne (nodulocystic, with scarring or the potential to scar; see Fig. 23.2)
  - Systemic isotretinoin
  - Hormonal therapy in women
- Antibiotic selection depends on a number of variables, including cost. Although most dermatologists consider minocycline to be superior to doxycycline due to better penetration into the sebaceous unit, it is generally more expensive and sometimes associated with drug-induced lupus. Minocycline and doxycycline are both considered superior to simple tetracycline.

Clinical Course

The clinical course of acne is capricious. Some adolescents have mild disease that resolves quickly, whereas others progress to severe acne with scarring. Acne may persist for years or decades, especially in women. Acne is generally not a problem of late middle or older age, and occurrence in this age group should prompt investigation for an instigating agent (e.g., endocrine abnormality, drug effect).

Face Washing—Myth or Helpful?
A single-blinded, randomized, controlled clinical trial of 27 men was carried out for 6 weeks using a foaming facial cleanser that had no active antiacne properties. They were randomized to groups that washed once, twice, or four times daily. At the end of the study, no statistically significant differences among the three groups were realized, although the group that washed twice daily subjectively demonstrated slight improvement. The authors concluded that there is some evidence for washing the face twice daily.

Fig. 23.1. Open comedones (blackheads) on the back of an adolescent male with acne.

Fig. 23.2. Patient with severe acne with follicular papules, follicular pustules, and acneiform cysts. This will produce permanent scarring, and the patient is a strong candidate for systemic isotretinoin. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Drug-Induced Acneiform Reactions ICD10 code L27.0

Acneiform Drug Eruptions: Selected Drugs

- Androgens
- Bromides
- Cetuximab
- Corticosteroids
- Erlotinib
- Iodides
- Isoniazid
- Lithium
- Phenytoin
- Sirolimus
- Vitamin B_{12}

Pathogenesis

The common causes of drug-induced acneiform reactions are systemic corticosteroids and other androgens (steroid acne), but more than 200 drugs have been reported to cause or worsen acne. For many drugs, the mechanism whereby acne is caused is poorly understood, but in some cases there is histologic evidence of follicular hyperkeratosis. For other drugs, it has been speculated that follicular concentration or excretion results in irritation and inflammation of the pilosebaceous unit.

Clinical Features

- Acneiform eruptions are typically abrupt, especially when induced by systemic medications. However, there are exceptions, and some patients may experience an insidious onset, especially if the condition is caused by topical corticosteroids.
- Drug-induced acne is usually monomorphic in appearance.
- The primary lesion is a follicle-based erythematous papule or pustule (Figs. 23.3 and 23.4). Rare patients can demonstrate follicular hemorrhage (Fig. 23.5).
- Comedones are generally absent in early drug-induced acne and, if present, are usually the result of coexisting simple acne vulgaris or a chronic drug-induced process.
- Patients treated with certain drugs (e.g., bromides) may demonstrate background erythema (Fig. 23.6) or erythema with scale that can resemble dermatitis or seborrheic dermatitis (epidermal growth factor [EGF] receptor inhibitors).

Diagnosis

- The diagnosis is typically based on the appearance and history of recent use of a drug known to cause acne. The monomorphic appearance, absence of comedones, abnormal distribution (compared to acne vulgaris), and severe degree of involvement should suggest drug-induced acne.
- A 2- or 3-mm punch biopsy may be performed to exclude other disorders in the differential. However, the findings in acne not usually singularly diagnostic but may be supportive of the clinical assessment.
- Unusual presentations may require a culture of unroofed pustules to exclude staphylococcal folliculitis and pseudomonal folliculitis.

Treatment

- Because drug-induced acne is a self-limited condition, which will resolve with discontinuance of the drug, expectant resolution is often a reasonable approach to the condition.
- If the offending agent cannot be discontinued (e.g., EGF receptor inhibitors in cancer), mild drug-induced acne can be treated with benzoyl peroxide and/or topical antibiotics, such as clindamycin and erythromycin.
- More severe drug-induced acne can be treated with oral antibiotics, such as minocycline and doxycycline. Rare severe cases may require oral isotretinoin.

Clinical Course

Most drug-induced acneiform eruptions will spontaneously resolve, over a period of weeks to months, once the drug is removed and without permanent sequelae. Rare cases may persist for longer periods of time.

Fig. 23.3. Patient with generalized acneiform eruption due to isoniazid, a common cause of this reaction. (From the John Aeling Collection, Aurora, CO.)

Fig. 23.4. Patient with acneiform eruption with follicle-based papules and pustules due to oral corticosteroids. (From the Walter Reed Army Medical Center Collection, Washington, DC.)

Fig. 23.5. Patient with a hemorrhagic acneiform eruption due to trametinib, an MEK1 and MEK2 inhibitor used to treat melanoma.

Fig. 23.6. Patient with acneiform eruption with background erythema resembling rosacea. This case was caused by the bromine component of dextromethorphan hydrobromide, the active ingredient in Pertussin. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Rosacea ICD10 code L71.8

Pathogenesis

Rosacea is a common disorder, with about 14 million affected Americans, but the cause is poorly understood. Genetic factors probably play a role because the condition is common in persons of certain ethnic groups (e.g., Northern Europeans) and uncommon in persons of other ethnic groups (e.g., African Americans). Proposed theories include an abnormal response to microorganisms of the skin (e.g., bacterial, yeast, *Demodex* mites), or certain ingestions, solar damage, vascular anomalies, and dermal matrix abnormalities. It is well recognized that triggers are important in rosacea, such as sunlight, alcohol, caffeine, and tomato-based products, but these triggers may vary among individuals. Topical corticosteroids can aggravate rosacea.

Clinical Features

- Rosacea can affect persons of a wide age range, from adolescence to the elderly.
- Rosacea affects the face, particularly the forehead, nose, cheeks, and chin.
- Extrafacial rosacea (upper chest, scalp) can occur but is uncommon.
- Rosacea causes three types of skin lesions:
  1. Erythema with telangiectasias
  2. Acneiform papules and pustules
  3. Sebaceous gland hypertrophy

  Presentations may vary, and patients may demonstrate a combination of these elements:
  - Papulopustular rosacea (classic rosacea)—erythema and variable telangiectasias of the face, with follicle-based papules and pustules but without comedones (Figs. 23.7–23.9). This subtype may also demonstrate variable flushing and facial edema.
  - Erythromatotelangiectatic rosacea—prominent flushing and telangiectasias, with or without edema. The flushing is typically brought on by alcohol, spicy foods, hot beverages, or exertion.
  - Rhinophyma (phymatous rosacea)—irregular surface nodularity due to sebaceous gland overgrowth that is most prominent on the nose, but the cheeks and chin may also be affected.
  - Ocular rosacea—50% to 90% of patients with rosacea may have some degree of ocular involvement that typically manifests as blepharitis, conjunctivitis, or conjunctival erythema.

Diagnosis

- The diagnosis of rosacea is usually established on clinical grounds, but rare cases may require a biopsy to exclude other disorders (e.g., lupus).

Treatment

- Topical treatments for rosacea include metronidazole, 0.75% lotion, gel, or cream (applied bid), metronidazole, 1% cream (applied qd), azelaic acid, 15% gel or 20% cream (applied bid), sodium sulfacetamide, 10% lotion or cream (applied bid), or ivermectin, 1% cream (applied qd).
- Brimonidine, 0.33% gel (applied qd), is a topical vasoconstrictor available for diminishing redness, but a small number of patients may experience rebound worsening when the drug wears off.
- Topical tretinoin, 0.025% to 0.1% cream or gel, may be useful for some patients with rosacea, but, in other patients, it may increase erythema in a displeasing manner.
- Systemic treatments for rosacea include doxycycline or minocycline (50–100 mg PO every other day, qd, bid) or even subantimicrobial dosing of 40 mg of doxycycline (30 mg immediate release, 10 mg delayed release) have been shown to improve rosacea. Systemic medications can also treat ocular rosacea.
- Other treatment options include intense pulsed light therapy, topical tacrolimus ointment, and topical pimecrolimus cream.

Clinical Course

Rosacea can be improved with therapy, but it is a lifelong condition that is not “cured” in the strict sense.

Fig. 23.7. Patient with severe rosacea with follicular papules and erythema. Note the photosensitive distribution. Some patients improve with sunscreen use. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 23.8. Severe rosacea with follicular papules, erythema, pustules, and rhinophyma in a Hispanic man. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 23.9. Patient with steroid rosacea due to topical corticosteroid use. (From the William Weston Collection, Aurora, CO.)

Pseudomonas Folliculitis ICD10 code L73.9

Pathogenesis

Pseudomonas folliculitis, sometimes called hot tub folliculitis, is caused by infection of the follicular apparatus with *Pseudomonas aeruginosa*, especially serotype O:11, which is acquired from exposure to water, particularly that of heated pools, whirlpools, and hot tubs. Bacterial overgrowth in these water sources occurs when the pH is high, chlorine levels are low, and there is high usage and/or less frequent draining of the pool/tub. Less often, pseudomonal folliculitis is acquired from sponges, wet suits, and epilation. A similar but uncommon follicular infection is produced by *Aeromonas hydrophila*.

Clinical Features

- Pseudomonal folliculitis usually presents 1 to 3 days after exposure to a contaminated water source.
- Pseudomonal folliculitis produces 1- to 10-mm erythematous follicle-based papules, usually on the trunk and particularly on skin that is covered by the bathing suit (Figs. 23.10 and 23.11).
- Some erythematous papules may develop a central pinpoint pustule.
- The axillae, trunk, hips, and buttocks are usually affected.
- Larger nodules or abscesses may develop on occasion.
- Rare patients may develop acute mastitis (Fig. 23.12) or involvement of the palmoplantar sweat glands (so-called hot hand-foot syndrome).
- Otitis externa, conjunctivitis, or pharyngitis can develop if the head is immersed in contaminated water.
- Systemic symptoms are usually absent, but occasional patients develop malaise and low-grade fever.

Diagnosis

- The clinical presentation, when combined with an appropriate exposure history, is typically diagnostic.
- Culture of a pustule is confirmatory, or culture of the suspected water source can provide further support for the diagnosis.
- Biopsy usually demonstrates only a nonspecific folliculitis because the bacteria are difficult to visualize.

Treatment

- Pseudomonal folliculitis is self-limited in most healthy persons, and generally no treatment is required.
- Acetic acid, 5% compresses (applied for 20 minutes tid tor qid), may be used.
- Severe cases may benefit from oral ciprofloxacin, 500 mg PO tid for 5 to 7 days, but this has not been rigorously studied.
- It is important to educate the patient about the cause of the folliculitis and encourage preventive measures, such as draining and cleaning the hot tub, improved chlorination, and maintenance of proper pH.
- If the hot tub or pool is a public facility, the appropriate health authorities must be contacted.

Clinical Course

Pseudomonal folliculitis usually resolves without treatment in 1 to 2 weeks. Occasional patients may become carriers and continue to develop new pustules and abscesses for months. Lesions are more likely to occur in moist areas that support *Pseudomonas* carriage, such as the axillae, groin, and perianal area.

Fig. 23.10. Patient with numerous follicle-based, intensely red papules on pustules. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 23.11. Close-up of pseudomonal folliculitis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 23.12. Patient with tender swollen breast with lymphangitis and small numbers of follicular papules confined to the area beneath the top part of the bathing suit of this febrile patient. She was hospitalized for systemic antibiotics. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 24
Alopecia

Alopecia (hair loss) is one of the ten most common causes of skin-related visits to physicians in the United States. Alopecia can be classified as scarring or nonscarring, and, although this is an important categorization, it is important to note that some alopecia can be both nonscarring and scarring, depending on the clinical circumstances (e.g., tinea capitis with kerion formation).

Classification of Alopecia

Nonscarring Alopecia

- Alopecia areata
- Anagen effluvium
- Androgenetic alopecia
- Syphilitic alopecia
- Telogen effluvium
- Tinea capitis (rarely scarring)
- Traction alopecia (can scar)

Scarring Alopecia

- Central centrifugal scarring alopecia
- Discoid lupus erythematosus
- Folliculitis decalvans
- Frontal fibrosing alopecia

IMPORTANT HISTORY QUESTIONS

When did you first notice that you were losing hair?

Sudden diffuse hair loss favors telogen effluvium, anagen effluvium, or diffuse alopecia areata, whereas most other types of alopecia are insidious in onset (e.g., androgenic alopecia).

What products do you put on your hair?

Harsh chemicals that straighten hair (relaxers) or curl hair (perms) can damage it, yielding an alopecia.

Do you have any other known medical conditions?

Lupus erythematosus, secondary syphilis, thyroid disease, or chronic anemia may be associated with alopecia.

Have there been recent changes in your health?

A recent and significant physical stressor (e.g., pregnancy, marked weight loss, sustained high fever, major surgery, significant blood loss) can induce telogen effluvium.

What medications are you taking, and are any of these new?

Some medications can occasionally cause telogen effluvium (e.g., anticoagulants, oral retinoids, beta blockers, lithium), or anagen effluvium (e.g., chemotherapeutic agents).

Do you find yourself pulling on your hair under stress?

Trichotillomania is an alopecia caused by mechanical pulling of the hair. Some patients will openly admit to pulling at their hair, whereas others will hide such behavior.

IMPORTANT PHYSICAL FINDINGS

What is the distribution of hair loss?

The distribution of hair loss is important because it may be discrete (e.g., alopecia areata), patchy (syphilitic so-called moth-eaten alopecia), patterned (e.g., male-female pattern alopecia), or diffuse (e.g., telogen effluvium).

Is there evidence of inflammation or pustules?

Pustules may be indicative of folliculitis decalvans, dissecting cellulitis, or dermatophyte infection.

Is there evidence of epidermal changes in addition to the alopecia?

Epidermal changes, such as scale and crusting, may be seen in discoid lupus erythematosus or lichen planus, whereas many other forms of alopecia, such as alopecia areata, manifest little epidermal pathology.

Is there any scarring?

Alopecia may be divided into scarring (e.g., lupus erythematosus) and nonscarring forms (e.g., alopecia areata), so the presence of scar is significant. Some alopecias may be scarring or nonscarring (e.g., tinea capitis).

Is there hair loss in other hairy areas?

Involved eyebrows or eyelashes may favor trichotillomania, alopecia areata, or syphilitic alopecia.

Are there nail changes?

Beau lines may suggest telogen effluvium, whereas rough nails may suggest alopecia areata, and the formation of pterygium (e.g., split nails, often with a triangular lunula) may favor lichen planus.

Androgenic Alopecia ICD10 codes L64.9

GENETIC DISORDER

Pathogenesis

Androgenic (androgenetic) alopecia is the most common cause of hair loss in men and women. By age 50 years, about 50% of men will demonstrate significant androgenic alopecia and, at age 60 years, 50% of women will demonstrate this same condition. There is a definitive genetic component, with mutations in the androgen receptor gene playing a role. Androgenic alopecia is a result of increased follicular activity of 5α-reductase in men and increased dehydrogenase enzyme levels in women. In women, other mechanisms may also be important; thus, some authorities prefer the term *female pattern hair loss.* The increased enzymatic activity causes a short anagen (growing) stage in hair follicles, resulting in small, nonpigmented (miniaturized) hairs that are barely visible.

Clinical Features

- Women demonstrate a pattern of diffuse thinning on the vertex scalp, with general preservation of the front hairline.
- Although female pattern hair loss is most noticeable around the time of menopause, the thinning develops earlier in some women (Fig. 24.1).
- Men demonstrate recession of the bilateral temporal hairline, with or without thinning of the crown (Figs. 24.2–24.4).
- Severe cases in men demonstrate only a residual rim of hair around the posterior hairline.

Diagnosis

- The clinical presentation is usually diagnostic, but early-onset androgenic alopecia, which can occur as early as adolescence, can be difficult to diagnose and difficult for the patient to accept.
- Biopsy (with a 4-mm or larger punch) may not be diagnostic for only androgenic alopecia, but it can exclude a scarring and/or inflammatory alopecia. Miniaturization of hairs and increased sebaceous gland activity is compatible with androgenic alopecia. In general, the skillful evaluation of alopecia usually requires evaluation by a dermatopathologist rather than a general pathologist.
- In difficult cases, some dermatologists will perform a trichogram (so-called hair pluck), in which 50 to 100 hairs are pulled and examined to determine the ratio of anagen, catagen, and telogen hairs. This test is painful and requires expertise for interpretation. It is not recommended in the urgent care setting.

Treatment

- For men, finasteride (1 mg PO qd) produces improved hair counts of about 9% at 1 year and 15% at 2 years. It is most successful in early-onset androgenic alopecia. It is not nearly as efficacious in older women and should never be used in any woman who can become pregnant.
- Topical minoxidil solution (to the scalp, bid) is efficacious. Topical 5% minoxidil has been found to be statistically superior to topical 2% minoxidil in men and women.
- Cyproterone acetate is an antiandrogenic agent used in women with androgenic alopecia due hyperandrogenic states.
- There is weak evidence that concomitant seborrheic dermatitis may worsen androgenic alopecia, and treatment with 1% pyrithione zinc shampoo or a ketoconazole-based shampoo may decrease hair loss.
- Spironolactone (100–200 mg po qd) competitively inhibits androgen receptor binding. The drug does not reverse hair loss but may slow progression. Because of its side effect profile, it can only be used in women and cannot be used by women who may become pregnant because it may feminize a male fetus.
- As a last resort, hair transplantation is an option for some patients. However, a hair transplant is a time-consuming, painful, and expensive procedure, with the results being dependent on the skill of the surgeon.

Fig. 24.1. Typical diffuse pattern of hair loss on the vertex of the scalp in a woman.

Fig. 24.2. Moderately severe thinning of the frontoparietal area and crown in a man.

Fig. 24.3. Severe androgenic alopecia of the crown in a man.

Fig. 24.4. Almost complete loss of hair in the frontoparietal area and crown in a man. Note the scar from excision of a skin cancer.

Telogen Effluvium ICD10 code L65.0

Pathogenesis

Telogen effluvium results from abnormal synchronization of a normal random hair growth cycle. In normal persons, 90% to 95% of the scalp hairs are in anagen (the growth phase), 1% are in catagen (a regressive phase), and 5% to 10% are in telogen phase (a rest phase). In telogen effluvium, a major physical stressor, such as childbirth, marked weight loss, sustained high fever, or a similar event, induces a large number of hairs to transition from anagen to catagen and telogen simultaneously. Hence, there is marked hair loss 2 to 4 months after the physical insult because many hairs enter telogen at the same time.

Precipitating Causes of Telogen Effluvium

- Childbirth
- Endocrinologic changes
- High fever
- Idiopathic (no cause found in one-third of cases)
- Malabsorption syndromes
- Medication changes
- Surgery (usually major surgery)
- Trauma (car wreck with injury)
- Weight loss (typically crash diet)

Clinical Features

- Telogen effluvium causes an abrupt diffuse hair loss (Fig. 24.5). Patients have described hair as "falling out by its roots."
- The hair loss usually occurs 2 to 4 months after a precipitating event (Figs. 24.6–24.8).
- Typically, less than one-third of all hairs are lost.
- The scalp appears normal, without erythema or scale, unless a second skin disorder is also present (e.g., seborrheic dermatitis).
- Examination of the nails may demonstrate horizontal lines (Beau lines) from the same stressful event that has interrupted nail growth.

Diagnosis

- The history of a precipitating cause is important to the diagnosis, but, in some cases, the patient may not report an identifiable event.
- If no precipitating event is identified, the patient's medications should be reviewed. Drugs usually implicated in inducing telogen effluvium include hormone and thyroid replacement drugs, nonsteroidal antiinflammatory drugs (NSAIDs), anticoagulants, beta blockers, systemic retinoids, and some antihyperlipidemia agents.
- In cases without a readily identifiable cause, a complete blood count (CBC), serum ferritin level (to rule out iron deficiency), and thyroid function studies should be ordered.
- Hair loss should be diffuse, with less than one-third of the hair lost and with a normal scalp.
- The presence of Beau lines of the nails is strongly supportive of a diagnosis of telogen effluvium.
- A biopsy (4-mm punch biopsy to fat) may suggest the diagnosis, but the result is usually nondiagnostic. A biopsy is useful in excluding other diseases, including scarring alopecia.

Treatment

- No treatment other than reassurance is reasonable because most cases are self-limited. Over time, the hair will return to a random growth pattern, and the condition will resolve.
- Patients with telogen effluvium due to various systemic perturbations, such as thyroid disease, malnutrition, or anemia, may demonstrate persistent alopecia unless those conditions are rectified.
- Rare patients, especially middle-aged women, may develop a chronic telogen effluvium that continues for years. There are few data on the treatment of this rare and persistent variant, but topical minoxidil is the most reasonable treatment approach because it promotes and prolongs the anagen phase.

Fig. 24.5. Telogen effluvium daily hair counts demonstrating loss of more than 200 hairs/day. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 24.6. Moderate telogen effluvium demonstrating accentuation of the part. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 24.7. Woman with severe telogen effluvium. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 24.8. Severe telogen effluvium due to hypothyroidism.

Trichotillomania ICD10 code F63.3

Pathogenesis

Trichotillomania is a neuropsychiatric condition characterized by a compulsion to pull out one's hair. The compulsion may range from a mild, stress-relieving habit, similar to thumb sucking, to a near maniac and psychotic compulsion that is comorbid with other psychiatric issues. The incidence of trichotillomania is unknown, but the condition is more common in young children and adolescents and in females more than males. Two patterns are recognized—automatic, where hair is pulled nearly inadvertently while the person is engaged in another activity (e.g., watching television, studying), and focused, where hair pulling is the only activity at the time. About 50% of patients play with or chew their hair after pulling it. Some patients swallow the hair, leading to a gastric trichobezoar.

Clinical Features

- Irregular patches of nonscarring alopecia may occur anywhere but are most common on the vertex scalp. Some patients may demonstrate scarring from repetitive pulling or from additional psychotic behavior, such as attempting to dig out the hairs.
- An important clinical clue is hairs of different lengths in a single area of perceived loss. This results from patients pulling hairs individually, over time, with partial regrowth (Figs. 24.9 and 24.10).
- If the hair loss is unilateral, it tends to occur on the same side as the dominant hand.
- Rare cases may demonstrate hemorrhage or erosion (Fig. 24.11), particularly in patients who pull out larger patches of hair at one time.
- Less often, hair of other body sites is affected, such as the eyebrows (40%), eyelashes (50%; Fig. 24.12), and pubic hair (15%).
- Trichobezoars can be a complication because about 10% of patients eat the hair (trichophagy).

Diagnosis

- A history of other psychiatric disorders (e.g., anorexia, bulimia, obsessive-compulsive disorder) is also supportive of trichotillomania.
- Some patients will admit to hair pulling. Many affected patients describe a feeling of tension before pulling the hair, with some release of this tension after pulling. The patient may also report a feeling of elation, gratification, or pleasure after pulling the hair.
- If other family members are present, asking if the patient unconsciously tugs at his or her hair is less threatening than asking if the hair is being pulled out.
- Occluding an area of alopecia, with a bandage or dressing, so that the patient cannot pull those hairs out, will result in regrowth (so-called Band-Aid sign).
- A 4- to 6-mm punch biopsy can support the diagnosis or may even be diagnostic in problematic cases.

Treatment

- Selective serotonin reuptake inhibitors (SSRIs), such as oral fluoxetine (40–80 mg PO qd), produce inconsistent results, but even when efficacious the results are limited (11% improvement in one study).
- Tricyclic antidepressants, such as clomipramine, produce only marginal improvement.
- In adults, a randomized trial demonstrated that behavior modification therapy (e.g., diary entries, sensory aids to make the patient conscious of pulling, postponement interventions, response consequences involving undesirable tasks) was more effective than SSRIs, with 64% of patients showing improvement.

Clinical Course

In children, trichotillomania is often self-limited, but, in adults, it is often chronic or relapsing.

Fig. 24.9. Trichotillomania in an adolescent girl demonstrating hairs of variable lengths. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 24.10. Severe trichotillomania in a woman with hairs of variable lengths. (From the William Weston Collection, Aurora, CO.)

Fig. 24.11. Focal trichotillomania in a woman, with evidence of recent trauma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 24.12. Patient with trichotillomania of the eyelashes. (From the William Weston Collection, Aurora, CO.)

Traction Alopecia ICD10 code L65.8

Pathogenesis

Traction alopecia is a mechanically induced alopecia usually caused by a particular method of styling the hair (e.g., hair rollers that produce traction on the hair bulb, use of barrettes) or a particular hairstyle (e.g., cornrows, chignon, tight ponytails, tight pigtails). Although typically considered a nonscarring alopecia, in severe cases there may be some focal scarring and permanent loss of hair.

Clinical Features

- The condition can occur at any age and is much more common in women.
- The pattern is dependent on the hairstyle used (e.g., tight braids, tight ponytail, hair weaves) or by prolonged use of curlers in one area.
- Marginal traction alopecia of the frontal and temporal scalp is the most common presentation (Figs. 24.13 and 24.14).
- Chignon traction alopecia affects the occipital scalp and is caused by twisting the hair to maintain the bun.
- Examination of the hair with a hand lens may demonstrate movable white keratin cylinders on the hair shaft (peripilar casts), follicular erythema, and even pustules.
- The remainder of the scalp exam is typically normal.
- Acute and subacute cases may demonstrate broken hairs and vellus hairs in areas of alopecia.
- Chronic cases may demonstrate perifollicular scarring, with complete loss of hair.

Diagnosis

- The diagnosis is usually made based on the clinical presentation.
- Examination of adjacent hair under the microscope may demonstrate breakage (trichorrhexis nodosa), especially if a straightening product is being used.
- Biopsy with a 4-mm or larger punch may be diagnostic of traction alopecia, but it is usually nondiagnostic. However, it allows for an inflammatory alopecia to be excluded.

Treatment

- Some patients choose to continue the hairstyle that produced the alopecia, and no treatment is desired.
- Patients willing to change their hairstyle should select a new style that does not place tension on the hair, and usually there will be some regrowth.
- Hair loss that is further aggravated by a concomitant use of hair straighteners (thermal or chemical straightening) should be discontinued.
- In chronic cases, with resultant scar, the only option is hair transplantation.

Fig. 24.13. Girl with traction alopecia associated with a cornrow braiding hairstyle.

Fig. 24.14. Severe traction alopecia. Note new growth in the anterior areas. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Alopecia Areata ICD10 code L63.9

Pathogenesis

Alopecia areata is a form of hair loss that is the direct result of an autoimmune attack on the hair bulb by T cells. The antigen triggering this misguided immune response is unknown. However, persons with alopecia areata are more likely to have other autoimmune disorders, especially vitiligo. From 1% to 2% of all individuals will develop alopecia areata at some point in their lives.

Clinical Features

- Alopecia areata can affect persons of any age, but it usually affects those between 20 and 40 years.
- The scalp is usually affected, but any hair-bearing site may be involved.
- Patches of discrete hair loss are common (Figs. 24.15 and 24.16), but, on occasion, a diffuse form may affect the entire scalp (Fig. 24.17).
- In older patients, there is often preferential loss of pigmented hairs, with preservation of gray hairs.
- Lesions typically demonstrate centrifugal spread, with exclamation point hairs (broken-off hairs that are wider at the top than the bottom) at the peripheral edge (see Fig. 24.15). A hand lens, or other form of magnification, may be needed to discern these changes.
- The skin, although usually normal, may demonstrate subtle erythema in early lesions.
- Hair regrowth may develop in the center of lesions, although this may consist of vellus hairs or hairs that are finer and less pigmented than normal terminal hairs.
- About 10% of patients will also have subtle nail pitting, yielding a roughly textured nail.

Diagnosis

- Sharply circumscribed, usually annular, hair loss, with a smooth and normal-appearing scalp, especially if exclamation point hairs are present, is usually diagnostic of alopecia areata.
- Secondary syphilis may mimic alopecia areata, and a screening serologic study (e.g., rapid plasma reagin [RPR] test, Venereal Disease Research Laboratory [VDRL] test) is reasonable for persons who are sexually active or were recently sexually active.
- A biopsy (4-mm or larger punch) can be diagnostic of alopecia areata when T cells are visualized surrounding the hair bulb—dermatopathologists call this a swarm of bees pattern.

Treatment

- For patients who are unconcerned and/or have limited disease, no treatment is a reasonable option.
- Potent topical corticosteroids (e.g., clobetasol) is a first-line therapy, but often the treatment must be continued for a long period, and spontaneous resolution confounds any claims of efficacy.
- Intralesional triamcinolone (2.5–5 mg/mL) injected into the active peripheral edge is often used but can lead to some scalp atrophy, particularly if a stronger concentration is administered.
- Purposeful induction of allergic contact dermatitis with the application of diphenylcyclopropenone (DPCP) or squaric acid dibutyl ester has produced modest success, and occasionally spectacular results, but this complex treatment plan is best performed by a dermatologist with experience with this modality.
- Light therapy, using a towel soaked in 8-methoxypsoralen, followed by ultraviolet A radiation, has produced modest to excellent results.
- Topical minoxidil produces variable success and has few side effects.

Clinical Course

The course of alopecia areata is highly variable and unpredictable. Most affected patients experience spontaneous resolution over months, but some patients will progress and lose all their scalp hair (alopecia totalis) or all their body hair (alopecia universalis; see Fig. 24.17). Moreover, many patients will have reactivation of disease at some later point, with a waxing and waning clinical course, over time.

Fig. 24.15. Close-up of active lesions of alopecia areata demonstrating exclamation point hairs along the periphery of the hair loss. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 24.16. Patient with alopecia areata that involves the hairline (ophiasis) is often associated with progressive disease areas. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 24.17. Patient with alopecia universalis demonstrating total loss of hair areas. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Tinea Capitis ICD10 code B35.0

Pathogenesis

Tinea capitis is a fungal infection caused by species that can use follicular keratin as a food source. The most common species in North America are *Trichophyton tonsurans,* followed by *Microsporum canis.* The prevalence of tinea capitis is unknown, but one study has found a 4% incidence in a pediatric population.

Clinical Features

- Tinea capitis preferentially affects the occipital and parietal scalps.
- Solitary patches of alopecia may be present, or two distinct areas of alopecia may merge.
- The patches of alopecia are well defined but may be round, oval, or irregular.
- Broken hairs in the area of alopecia may be enlarged (so-called black dot ringworm; Fig. 24.18), or acute folliculitis with purulence may be apparent (Fig. 24.19).
- The skin surface may demonstrate variable scale and scattered broken hairs. These infections may resemble seborrheic dermatitis (Fig. 24.20).
- Kerions (Fig. 24.21) are caused by an intense inflammatory host response, resulting in boggy purulent masses of hair loss (see Chapter 13).

Diagnosis

- A high index of suspicion should exist in any child with hair loss and/or a scaling scalp.
- Consider tinea capitis in any prepubertal child diagnosed with seborrheic dermatitis because that condition is uncommon before puberty.
- A potassium hydroxide (KOH) examination on plucked broken hairs or on a scraping across broken hair with a no. 15 blade may confirm the diagnosis. A toothbrush can be used to collect broken hairs from apprehensive children.
- Fungal cultures of broken hairs or scrapings are typically positive in 1 to 4 weeks.
- A punch biopsy (3–4 mm) is the least preferable method for diagnosis because it is invasive and difficult to do in children.
- Wood light will demonstrate fluorescence in 5% to 10% of cases—those caused by *Microsporum* spp.

Treatment

- The most widely used treatment is micronized griseofulvin (20–25 mg/kg per day) or ultramicronized griseofulvin (10–15 mg/kg per day), given as a single daily dose with a fat-containing meal for 6 to 12 weeks.
- Unless there is cause for concern (e.g., hepatitis), griseofulvin therapy lasting less than 3 months does not require laboratory monitoring (CBC, liver function tests [LFTs]).
- Itraconazole (3–5 mg/kg per day for 2–6 weeks) may be used as an alternative to griseofulvin.
- Terbinafine (3–10 mg/kg per day for 4–8 weeks) is effective for *T. tonsurans* infections, but cases caused by *M. canis* may require higher doses and extended durations (6–10 mg/kg per day for 8–12 weeks).
- Topical antifungal shampoos lessen fungal shedding.
- Routinely examine other children in the family because they are at high risk for infection. Adults have a lower risk of acquiring the disease from affected children but may also be examined.

Comment

It is the position of the American Academy of Dermatology and American Academy of Pediatrics that a child should not miss school because of tinea capitis. Fungal shedding can be addressed with selenium sulfide or ketoconazole shampoo. Once children begin systemic and topical therapy, they may return to school. Affected children should not share hats, combs, or brushes with others. Routine cases of tinea capitis do not result in permanent alopecia. Kerions result in permanent hair loss in about one-third of cases.

Fig. 24.18. Patient with black dot ringworm demonstrating prominent broken hairs. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 24.19. Patient with black dot ringworm with alopecia and acute folliculitis.

Fig. 24.20. Patient with alopecia with broken hair shafts and diffuse scaling resembling seborrheic dermatitis. This case was due to *Microsporum canis.*

Fig. 24.21. Highly inflammatory tinea capitis (kerion) in an 80-year-old woman. Although tinea capitis is most common in prepubertal children, it can occur at any age.

Lupus Erythematosus ICD10 code L93.0

Pathogenesis

A scarring alopecia can accompany discoid lupus erythematosus (DLE) or systemic lupus erythematosus (SLE). Up to 35% of patients with DLE will develop scalp involvement. Patients with SLE can develop a nonscarring alopecia affecting hairs in the frontal scalp (lupus hairs), or, less commonly, they can develop a scarring alopecia. Microscopically, the scarring alopecia of all forms of lupus are mediated by a destructive lymphoid infiltrate.

Clinical Features

- Patients may have other findings of DLE (e.g., involvement of the conchal bowl) or SLE (e.g., malar erythema).
- Areas of alopecia may be solitary or multiple and may involve any area of the scalp.
- The lesions of alopecia may be of variable size and shape but are often round (discoid). Lesions may continue to enlarge and become confluent.
- Early lesions consist of plaques of hair loss, with variable erythema (Figs. 24.22 and 24.23) that progress to the development of adherent scale and follicular plugging (so-called carpet tack sign).
- Fully developed lesions demonstrate atrophy and variable dyspigmentation (hypopigmentation and/or hyperpigmentation; Figs. 24.24 and 24.25).

Diagnosis

- The clinical presentation is often diagnostic, and an associated history and/or appropriate clinical findings of DLE (see Fig. 24.25) or SLE would strongly support the diagnosis.
- A punch biopsy (3–6 mm) of an active edge is usually diagnostic, whereas biopsies taken from central scarred areas are not usually diagnostic.
- Direct immunofluorescence studies may also be of value, with a lupus band being present in most cases.
- Recommended screening studies include an antinuclear antibody (ANA) test, positive in about 20% of patients, CBC, comprehensive metabolic panel (to include liver enzymes), and possibly total hemolytic complement studies. These studies are important because some patients will have SLE.

Treatment

- Photoprotection is important and should include sun avoidance, hats and other protective clothing, and a broad-spectrum sunscreen.
- For localized cases, a potent topical corticosteroid (clobetasol cream or ointment) is applied to active lesions bid.
- Intralesional triamcinolone (5–10 mg/mL) may be used for patients unresponsive to topical corticosteroids. Oral prednisone is also effective, but a steroid-sparing agent will then be necessary.
- Hydroxychloroquine (200 mg PO bid) is the most widely used oral therapy. The onset of action is slow, and patients typically require 2 to 3 months of use before its efficacy can be assessed.
- Second-line steroid-sparing systemic agents include azathioprine, isotretinoin, thalidomide, and mycophenolate mofetil.

Clinical Course

In scarred areas, hair loss is permanent. In early lesions, where there is active inflammation, but not yet fully developed scar, aggressive therapy may result in some regrowth. On rare occasions, squamous cell carcinoma can arise in long-standing scarred plaques (Marjolin ulcer). Any new papule or nodule that develops in a plaque of DLE on the scalp should be biopsied.

Fig. 24.22. Solitary patch of scarring alopecia with erythema in a patient with discoid lupus erythematosus.

Fig. 24.23. Patient with large confluent patches of scarring alopecia. Patches of erythema represent active sites of inflammation.

Fig. 24.24. Patient with scarring alopecia due to discoid lupus erythematosus, with prominent hypopigmentation.

Fig. 24.25. Patient with multiple areas of scarring alopecia with hypopigmentation and hyperpigmentation. Note discoid lupus erythematosus in the ears and on the face. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Central Centrifugal Cicatricial Alopecia ICD10 code L66.8

Pathogenesis

Central centrifugal cicatricial alopecia (CCCA), formerly called hot comb alopecia or follicular degeneration syndrome, is a scarring alopecia of unknown cause. There is a controversial relationship between CCCA and pseudopelade of Brocq. Despite attempts to implicate hair products (e.g., relaxers) and hairstyling behaviors (e.g., hot combs, traction), the pathogenesis is still not well understood. Histologically, CCA is a folliculocentric, lymphocyte-mediated disorder that leads to destruction of the upper third of the hair follicle and a permanent scarring hair loss.

Clinical Features

- CCCA typically affects young to middle-aged women, with most patients being of African American heritage, but men and other ethnic groups may be affected.
- The disease usually affects the crown and vertex scalp and progresses slowly in a centrifugal pattern.
- Patches of scarring alopecia, without follicular plugging and with minimal scale or erythema, arise; the condition is typically ill defined, without sharp borders (Figs. 24.26–24.28).
- Some cases demonstrate multiple hair shafts emanating from a single follicular orifice (see Fig. 24.27).
- Symptoms vary from none to a mild or moderate pruritus.
- Other hair on the body is not affected.

Diagnosis

- A scarring alopecia that predominantly affects the crown and vertex scalp of an African American woman is particularly suspicious for CCCA.
- A 4- to 6-mm punch biopsy of the active edge often manifests supportive or even diagnostic findings. Biopsies taken from scarred areas will only demonstrate scar.
- Negative direct immunofluorescence results are useful in excluding lichen planopilaris and discoid lupus erythematosus.

Treatment

- Potent topical corticosteroids (e.g., clobetasol) should be applied to the active edge, but treating scarred areas is unnecessary.
- Oral doxycycline or minocycline at standard dosages may be combined with topical corticosteroids.
- Intralesional triamcinolone (5–10 mg/mL), injected every 4 weeks for 6 months, is often used if topical corticosteroids fail. This treatment can also be used in combination with oral tetracyclines.
- Oral hydroxychloroquine (200 mg PO bid) for 6 months or longer is often used if intralesional corticosteroids or oral tetracyclines fail.
- Methotrexate (5–25 mg/week) or mycophenolate mofetil (1.5–2.5 g/day in divided doses) is reserved for severe cases.
- Surgical options for the scarred areas include scalp reduction and hair transplantation. Surgical intervention is not typically done until the disease has become quiescent.

Clinical Course

CCCA is a progressive scarring alopecia that may last for decades before spontaneous remission transpires. Although disease progression may be arrested with the treatments specified, no controlled clinical trial has demonstrated that any treatment modality can definitively modify the disease course.

Fig. 24.26. Patient with central centrifugal cicatricial alopecia on the vertex of the scalp, the most common site. This case demonstrates an ill-defined scarring alopecia, with a perifollicular scar. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 24.27. Close-up of central centrifugal cicatricial alopecia demonstrating a perifollicular scar and multiple hairs emanating from dilated orifices. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 24.28. Patient with early central centrifugal cicatricial alopecia on the central scalp demonstrating an ill-defined cicatricial alopecia. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 25
Nail Disorders

Key Terms

Paronychia
- Acute paronychia
- Chronic paronychia

Onychomycosis
- Leukonychia mycotica

Onychauxis
- Thick hyperkeratotic nails

Trachyonychia
- Twenty-nail dystrophy

Nail disorders are often encountered as "Oh, by the way…" issues, meaning that the patient brings up the concern during an evaluation for some other medical ailment. Even for dermatologists, the evaluation of nail disorders can be daunting because of the challenging terminology and sheer number of conditions that can affect the nail. Many dermatologists have one or more nail books in their personal reference library for this reason.

Nail Glossary

- Anonychia—absence of the nail
- Brachyonychia—short nails
- Chromonychia—discolored nails
- Koilonychia—spoon nails
- Leukonychia—white nails
- Micronychia—small nails
- Onychauxis—thick nails
- Onychocryptosis—ingrown nails
- Onycholysis—separation of the nail from the bed
- Onychomadesis—nail shedding
- Onychorrhexis—longitudinal nail ridging
- Onychoschizia—split nails
- Paronychia—nail fold inflammation
- Trachyonychia—rough nails

IMPORTANT HISTORY QUESTIONS

How long have your nails been abnormal?

Nail disorders can be congenital or acquired. Infections are more likely to have an acute onset.

Is there any family history of a similar disorder?

Most nail disorders are acquired, but some conditions, such as pachyonychia congenita and Darier disease, are inherited in an autosomal dominant manner. In psoriasis, which has a strong familial element, this question will elicit a positive response in less than half of cases.

Has there been any trauma, and are the nails continuing to change?

Nail trauma can lead to subungual hemorrhage, but even this should be limited to a point in time—the nail discoloration will grow out distally and, eventually, will be sloughed. Ongoing and persistent change, or even worsening disease, is more concerning and could even be a sign of a malignant process.

IMPORTANT PHYSICAL FINDINGS

How many nails are involved?

Some disorders of the nail suggest a systemic disturbance, particularly when multiple nails, or even all the nails, are involved. Other disorders usually involve just one nail, such as onycholysis caused by *Pseudomonas* infection.

Which portion(s) of the nail are affected by the disease?

Some disorders affect the entire nail plate, whereas other conditions affect only the lunula (argyria) or the distal nail (most forms of onychomycosis). If the nail is thickened, it is important to determine how much of the nail plate is affected. Onychomycosis usually involves just the subungual area; psoriasis usually involves all layers of the nail plate.

If tan, brown, or black pigment is present in the nail, in a linear fashion, what is the shape of this pigmented area?

Nails are formed in the matrix and move forth as dead keratin. Therefore, the nail provides a 6- to 12-month window into the history of nail health. As shown in Fig. 25.1, the shape of the pigment deposited provides a clue as to whether the process is growing over time (a widening streak), or if it is a stable process (no widening over time). Longitudinal bands of 4 mm or more in width are more likely to be malignant.

Fig. 25.1. Growing lesions are wider proximally.

Paronychia ICD10 code L03.0

Pathogenesis

Acute paronychia is usually caused by bacterial infection, including *Pseudomonas* spp., *Staphylococcus aureus*, and β-hemolytic streptococci. Acute paronychia may also be caused by foreign body reactions (ingrown toenails). Chronic paronychia is more often due to infection with *Candida albicans*. Risk factors for paronychia include frequent gardening, dishwashing, or occupational food handling (one of the authors developed chronic paronychia tending bar). Excessive hand washing (including those in health care) or exposure to solvents and glues may also predispose one to paronychia. Excessive cosmetic removal of the cuticle can result in a space between the nail plate and nail fold that allows for the buildup of irritants (soaps) or for the overgrowth of bacteria *(Pseudomonas)* and yeast *(Candida).*

Clinical Features

- Acute paronychia is an abrupt inflammatory disorder affecting the proximal nail fold, characterized by pain and erythema. Many cases will drain pus with pressure, or even spontaneously, which may indicate development of an abscess (Fig. 25.2).
- Chronic paronychia is a persistent inflammatory disorder of the proximal nail fold. It affects chiefly women, but both genders and any age group may be affected. It presents as erythema and edema of the proximal nail fold, with loss of the cuticle (Figs. 25.3 and 25.4). The nails may be normal but often demonstrate excessive ridges (Beau lines), variable onycholysis, other nail irregularities, or even a green-blue discoloration due to *Pseudomonas* infection.

Diagnosis

- Acute, chronic, or recurrent erythema and swelling of the proximal nail folds associated with pain suggest the diagnosis; the physical examination is typically diagnostic.

Treatment

Acute Paronychia

- Acute paronychia with abscesses, as seen in Fig. 25.3, should be incised with a no. 11 scalpel blade (usually incised where the skin meets the nail fold or where the nail fold meets the nails). The contents should be cultured.
- The most commonly used oral antibiotics are directed against *Staphylococcus aureus;* options include oral dicloxacillin, cephalexin, and clindamycin if methicillin-resistant *S. aureus* (MRSA) is a concern.

Chronic Paronychia

- Use hand protection (gloves) from potential irritants and water.
- Discourage removal of cuticle during a manicure. Explain to the patient that the cuticle is a normal structure necessary to ensure that the nail fold attaches to the nail plate. The absence of this structure results in a space that collects food, soap, bacteria, and yeast.
- Discourage the use of antibacterial soaps that result in loss of the normal gram-positive skin flora, resulting in increased gram-negative skin flora (i.e., *Pseudomonas*) and yeast overgrowth.
- The mainstay of therapy is use of a medium (e.g., triamcinolone) to potent (e.g., clobetasol) topical corticosteroid cream or ointment for 2 to 4 weeks. Approximately 85% of cases will be improved or in complete remission at 4 weeks. However, a high percentage of cases will relapse.
- Rare cases may benefit from the addition of a systemic antifungal agent directed against *Candida* spp. (e.g., itraconazole, 200 mg/day for 4–6 weeks).

Fig. 25.2. Patient with acute paronychia, with abscess and marked erythema. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.3. Patient with chronic paronychia, with dystrophic nail. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.4. Patient with chronic paronychia, with superficial peeling (onychoschizia) of nails. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Onychocryptosis (Ingrown Toenails) ICD10 code L60.9

MECHANICAL DISORDER

Pathogenesis

Onychocryptosis is due to an overcurved nail plate that is wider than the nail bed. In many cases, the cause cannot be elucidated, although in some cases it is due tight-fitting shoes, maceration of the lateral nail groove, or cutting the distal nail plate too short. The increased incidence in patients with misalignments of the great toe or wide feet suggests that other mechanical factors are important.

Clinical Features

- It may occur in any age group, including neonates, but is most common in adolescents and young adults.
- The great toenail is usually affected, but other or multiple toenails may be involved. Less commonly, the nails of the hand can be involved.
- Early in the course, erythema, edema, and pain on pressure of the lateral nail groove are present (Fig. 25.5).
- In addition to erythema and edema, developed lesions may demonstrate abscess formation.
- Chronic lesions demonstrate granulation tissue and hypertrophy of the lateral nail fold (Fig. 25.6).

Diagnosis

- There is a history of acute or chronic erythema and pain of the lateral nail fold.
- The physical appearance demonstrates variable edema and erythema that is most pronounced on the distal lateral nail fold.
- Compression of the lateral nail fold toward the nail plate will almost invariably produce pain.

Treatment

Acute Ingrown Toenail

- Neonatal ingrown toenails can usually be treated by soaking the nail in warm water, followed by gentle massaging of the distal nail plate and lateral nail fold and then the application of petrolatum.
- Adult nails can also be treated with soaking the nail in warm water (with or without Epsom salts).
- A wisp of cotton can be gently inserted between the distal lateral nail and lateral nail fold to reduce contact. This can be replaced daily. The cotton can also be impregnated with an antiseptic.
- The topical application of a medium (e.g., triamcinolone) to potent (e.g., clobetasol) topical corticosteroid cream or ointment for 1 to 2 weeks is useful for reducing the inflammatory host response.
- A strip of adhesive tape may also be attached to the lateral nail fold, pulled beneath the toe, and adhered to the plantar surface to relieve the pressure point between the nail and lateral nail groove. This can be repeated daily, as needed, until the inflammation improves.

Developed Ingrown Toenails With Abscesses

- Conservative measures, as outlined for acute ingrown toenails, can be used.
- An abscess should be drained for immediate relief.
- Surgical treatment options may be considered but require local anesthesia, with a proximal block.
- Although many surgical treatments have been described, the most common technique involves using a septum elevator to free the lateral nail fold from the nail bed, matrix, and proximal nail fold, followed by longitudinally splitting the nail (using an English anvil nail splitter) to the matrix and removing a portion of the lateral nail (typically, ≈2 mm wide). This is followed by cauterization of the lateral matrix with 90% phenol for 2 to 3 minutes (some authorities prefer three separate 30-second applications), followed by flushing the area with alcohol to neutralize the phenol.

Chronic Ingrown Toenails With Granulation Tissue and Hypertrophy

- Surgical treatment is required in some cases. This should be done by a clinician with experience.

Fig. 25.5. Onychocryptosis of the big toenail in an adult demonstrating marked erythema, induration, and crust of the medial nail fold.

Fig. 25.6. Chronic pediatric bilateral onychocryptosis in a young child. Note that the nail demonstrates more than normal curvature, a frequent clinical finding. (From the William Weston Collection, Aurora, CO.)

Onychomycosis ICD10 code B53.1

Pathogenesis

Onychomycosis (tinea unguium) is a fungal infection of the nail that is usually caused by infection with a dermatophyte, with *Trichophyton rubrum* accounting for the vast majority of cases (>70%). Less commonly, nondermatophytes including *Candida* spp. (≈10%), *Scopulariopsis brevicaulis* (≈10%), *Fusarium* spp., and others may produce disease.

Clinical Features

- Although it may occur at any age, the prevalence increases with older age and is most common in the elderly.
- Although any nail may be infected, usually toenails are preferentially involved.
- The number of infected nails is variable, one to all nails.
- The appearance of the nail is dependent on the degree of infection. Typically, the dorsum of the nail plate is normal, and the underlying subungual area is affected with hyperkeratotic crumbly keratin, which may produce a yellow-white discoloration of the nail (Fig. 25.7).
- The distal portion of the nail is typically involved, and the proximal area near the skin is spared.
- Associated findings consistent with tinea pedis are often present (Fig. 25.8).
- Less commonly, the nail may demonstrate onycholysis (loss of adhesion).
- The nail plate may be normal or dystrophic; very rarely, the nail demonstrate full-thickness infection.
- Leukonychia mycotica is a less common variant characterized by a white discoloration on the surface of the nail. This is produced when the dermatophyte has infected the surface of the nail.

Diagnosis

- In regard to the clinical presentation, onychomycosis is in the differential diagnosis in any nail disorder demonstrating subungual discoloration or onycholysis.
- The diagnosis can be confirmed by sampling the subungual debris with a small curette or scalpel blade (no. 14) and identifying hyphae with a potassium hydroxide preparation (see Chapter 2).
- Material for culture can be obtained by a small curette or scalpel blade or by clipping or cutting the nail.
- For biopsy, the nail plate can be clipped or cut and sent to a pathologist or dermatopathologist for special staining.

Role of Surgical Avulsion

Although prospective randomized trials have not been performed, surgical avulsion of nails as a monotherapy has a high recurrence rate in onychomycosis. In those cases in which it needs to be done for mechanical reasons, concomitant antifungal therapy is needed.

Treatment

- Onychomycosis is a chronic and often progressive infection that does not spontaneously resolve.
- No treatment is an option because the treatment is not always successful; however, patients with diabetes or a history of recurrent cellulitis should be considered for treatment to reduce the chance of developing recurring cellulitis. Patients with painful onychomycoses are also candidates for therapy.
- Topical treatments include ciclopirox olamine, 8% lacquer, or efinaconazole, 10% topical solution. Both treatments are applied once daily to the nail for 1 year. The cure rate is around 10%.
- Oral terbinafine, which has a cure rate of about 60% to 70%, is the treatment of choice. Fingernails are treated at a dose of 250 mg/day for 6 weeks; toenails are usually treated with 250 mg/day for 12 weeks.
- Oral itraconazole and oral fluconazole are alternative options in patients who are not able to take terbinafine; however, the cure rate is lower for both drugs.
- Laser ablation followed by topical therapy is an option for select patients who cannot take oral drugs. Approximately 50% of patients demonstrate a complete response with this treatment.

Fig. 25.7. Patient with onychomycosis demonstrating a yellowish-white subungual infection. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.8. Patient with dry scaly tinea pedis, with development of subungual onychomycosis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Onycholysis ICD10 code L60.1

Pathogenesis

Onycholysis is not a specific disease but is a term that describes separation of the nail plate from the underlying nail bed. Numerous disease processes may cause onycholysis, including infection (e.g., fungus), medications (e.g., tetracycline-induced photo-onycholysis), trauma (e.g., immersing fingers in scalding water, self-induced), endocrine disorders (e.g., hyperthyroidism), and primary skin disorders (e.g., psoriasis).

Causes of Onycholysis

Infection
- *Candida* spp.
- Dermatophyte
- *Pseudomonas* spp.
- Internal disorders
- Anemia
- Hypothyroidism and hyperthyroidism
- Scleroderma

Medications
- Chemotherapy
- Doxycycline
- Oral contraceptives
- Fluoroquinolones
- Tetracycline

Idiopathic

Neoplasia
- Glomus tumor
- Squamous cell carcinoma

Skin Disorders
- Dermatitis
- Psoriasis

Traumatic

Clinical Features

- Onycholysis can occur at any age.
- Onycholysis may involve one nail or multiple nails.
- Onycholysis may be asymptomatic or painful.
- Onycholysis usually affects the distal nail, but proximal onycholysis may occur, particularly with chemotherapy.
- The lytic (separated) portion of the nail is usually white or yellow-white in color (Figs. 25.9–25.12).
- Subungual hemorrhage may be present.

Diagnosis

- Onycholysis is usually easily recognized, with observation of a white nail and loss of normal attachment to the underlying nail bed.
- Determining the cause of onycholysis is more difficult because multiple disease processes must be considered (see box).
- A KOH prep or fungal culture can exclude fungal infection.
- Biopsies are usually not performed but may be considered to exclude malignancy, particularly if there is a single onycholytic nail of chronic duration.
- In some cases, no cause is ever ascertained (idiopathic).

Treatment

- Treatment of the underlying disorder causing onycholysis is the most effective therapy (e.g., decreasing or withdrawing offending medication[s], treatment of infection). It is important to explain to the patient that onycholysis can be permanent.
- Unless specific patient behaviors are contributing to the problem, the nails should be trimmed back to reduce the chance of external trauma aggravating the condition.
- Repetitive trauma, such as typing or drumming or tapping the nails, should be avoided, where possible.
- Prolonged immersion of the nails in water should be avoided, where possible.
- Bacterial colonization can be a contributing factor—*Pseudomonas* produces proteolytic enzymes that aggravate the separation—and yeast can overgrow in the lytic space. Therefore, topical thymol, 3% to 4% in alcohol, applied underneath the nail plate bid for 6 to 12 weeks, is useful. This solution can be formulated by compounding pharmacies or may be purchased via the Internet.
- A topical imidazole solution (e.g., clotrimazole) is useful if secondary candidiasis is a concern.

Fig. 25.9. Acute photo-onycholysis due to tetracycline that occurred when the patient was reading a book at the pool. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.10. Patient with chronic onycholysis due to repeated trauma of long nails. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.11. Patient with onycholysis due to excessive use of topical nail hardeners. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.12. Patient with iatrogenically induced onycholysis due to excessive thyroid supplementation. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Onychauxis ICD10 code Q84.5 (or disease-specific code)

NUMEROUS ETIOLOGIES

Pathogenesis

Onychauxis is a descriptive medical term that refers to thick hyperkeratotic nails caused by a buildup of keratin. The most common cause is a dermatophyte (fungal) infection, which is discussed in greater detail in this chapter (see "Onychomycosis"). Psoriasis is another common cause that can be difficult to differentiate from onychomycosis. Other causes are listed in the box.

Causes of Onychauxis

Common

- Onychomycosis
- Onychogryphosis
- Psoriasis

Uncommon

- Darier disease
- Norwegian scabies
- Pachyonychia congenita
- Reactive arthritis (Reiter disease)

Clinical Features

- Onychauxis occurs chiefly in adults, including geriatric patients. Children are infrequently affected unless the cause is a genodermatosis.
- The condition may affect one or more nails (Figs. 25.13 and 25.14).
- Keratin buildup may be confined to the subungual area or may affect the entire nail. For example, in pachyonychia congenita and onychomycosis, only the subungual region is affected, whereas in psoriasis (Fig. 25.13) and crusted scabies (see Fig. 25.14), the entire nail plate is often affected.
- Elderly patients, particularly those unable to groom themselves well, may develop thick nails with hyperkeratosis in addition to other nail abnormalities.
- Other signs of cutaneous disease that can affect the nail should be sought. For example, evidence of psoriasis, scabies, reactive arthritis, or tinea pedis may be associated with onychauxis.

Diagnosis

- The clinical presentation may or may not be diagnostic.
- A history of a genodermatosis, such as Darier disease and pachyonychia congenita, is helpful information, but lack of a family history does not exclude a spontaneous mutation.
- A history or physical presence of a preexisting acquired skin disorder, such as psoriasis, reactive arthritis, tinea pedis, or scabies, is important.
- A KOH prep of subungual debris can exclude onychomycosis, particularly because it can be difficult in some cases to distinguish psoriasis confined to the nails from dermatophyte infection. A generous clipping of the dystrophic nail may also be sent for histologic examination to exclude fungal infection.
- In rare cases, the nail can be biopsied with a punch and submitted for histologic examination. Evaluation of nail plates can be challenging, and there is preference for review by a dermatopathologist.

Treatment

- There are no specific treatments for thick hyperkeratotic nails. Treatment focuses on identifying and treating any underlying primary disorder, if possible.
- Clearly, patients with onychauxis due to an inherited disorder cannot be cured.

Fig. 25.13. Psoriatic nails without other cutaneous evidence of cutaneous psoriasis. This patient was erroneously treated for more than 1 year as suffering from onychomycosis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.14. Patient with Norwegian scabies demonstrating massive onychauxis of one nail.

Onychoschizia (Lamellar Dystrophy) ICD10 code L60.3

Pathogenesis

Onychoschizia, also known as lamellar dystrophy, or brittle nails by patients, is usually a result of aging, and the condition is common in the elderly. Brittle nails usually demonstrate associated longitudinal ridging, roughness to the nail (trachyonychia), and horizontal splitting of the distal nail plate (lamellar dystrophy). Other common causes include repetitive hydration and dehydration of the nail plate from repeated water immersion and damage from the use of nail enamel, nail polish remover, and chemical cuticle removers. Trauma and previous surgical procedures can also produce lamellar dystrophy.

Clinical Features

- Increased longitudinal ridging of nails
- Rough nails also frequently present
- Increased distal horizontal splitting of nails (Figs. 25.15 and 25.16)
- Increased distal vertical splitting of nails

Diagnosis

- The clinical presentation is usually diagnostic.

Treatment

- Elimination or minimization of exogenous damage (e.g., harsh nail products, repeated water immersion, unnecessary nail trauma) is important in management.
- Another therapy consists of purposeful soaking of the nails in tap water for 10 to 15 minutes once daily (best done in the evening), followed by direct application of 12% ammonium lactate lotion containing moisturizers.
- Oral biotin (vitamin B_7), 2500 μg (2.5 mg)/day has shown modest improvement in nail health in about two-thirds of patients in limited studies. The rationale for the use of biotin to treat thin or brittle nails is that oral biotin has been used to increase the thickness of hoofs in farm animals. A large, well-controlled, blinded trial in humans has never been performed.

Fig. 25.15. Patient with onychoschizia manifesting as horizontal splitting of the distal nail. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.16. Patient with severe linear onychoschizia secondary to severe trauma of the nail bed. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Beau Lines ICD10 code L60.4

Pathogenesis

Beau lines represent stunted or arrested growth of the nail, usually due to a systemic insult or less commonly localized trauma. Examples of primary events that can induce Beau lines include high fever, drug reactions, major surgery, new medication (particularly chemotherapeutic agents), and other significant insults to the patient. Some patients may have associated telogen effluvium for similar reasons. Severe insults produce deep indentations; minor insults produce subtle transverse lines. Similarly, a single event may produce a narrow line, whereas a longer lasting insult produces a wider line. Based on the location on the nail, the approximate time of the nail insult, relative to the normal growth time of the nail (3–6 months), can be estimated by measuring from the proximal nail fold to the line.

Fingernail Growth

The average adult's fingernail grows about 3 mm/month. When examining a patient with Beau lines, the approximate time of the insult can be estimated. However, it is also important to know that the rate of fingernail growth slows down as an individual ages, a factor that also needs to be considered.

Clinical Features

- Beau lines can occur in any age group.
- If the insult was relatively minor or localized, Beau lines may present in only a single nail or a few nails. If the insult was severe or systemic, Beau lines are present in all the nails of the hands and feet.
- The primary lesion is a transverse line or depression in the nail plate, of varied width and depth (Fig. 25.17). In severe cases (e.g., with chemotherapy), the nails demonstrate wide bands of stunted growth, or the nails may even be shed (Fig. 25.18).
- As the nails grow, the involved area near the distal edge of the nail plate may manifest increased brittleness or flaking.

Diagnosis

- The clinical presentation is diagnostic, and additional testing is not required.
- Identifying a precipitating event may involve measuring the distance from the proximal nail fold to the Beau line. Because the nail grows about 3 mm/month, it is possible to estimate the date of any precipitating event and compare this to the patient's recollection or history.

Treatment

- There is no effective treatment for Beau lines, but, with removal of the insult, the line will eventually be displaced from the nail with normal growth.

Clinical Course

If the insult is removed, the Beau line will grow out and be shed, without permanent sequelae.

Fig. 25.17. Patient with sharply demarcated Beau lines that were secondary to an episode of toxic shock syndrome.

Fig. 25.18. Child with severe Beau lines due to chemotherapy that is bordering on becoming a shedding of nails (onychomadesis).

Trachyonychia (Rough Nails, Nail Pitting) ICD10 code L60.3

MULTIPLE ETIOLOGIES

Pathogenesis

Trachyonychia is a broad term used to describe rough nails. It usually implies that the entire nail is involved. Nail pitting is a limited form of trachyonychia, in which the changes are focal. *Twenty-nail dystrophy* is the term used when essentially all the nails are affected; the condition occurs chiefly in children. It is thought that most cases of twenty-nail dystrophy represent lichen planus or alopecia areata, although in some cases an underlying condition cannot be established. In sum, twenty-nail dystrophy is not thought to be a specific disease, but the name is still often used in dermatology, even when the underlying cause is unknown.

Causes of Rough Nails and Pitting

- Alopecia areata
- Dermatitis
- Lichen planus
- Psoriasis
- Trauma
- Twenty-nail dystrophy
- Vitiligo

Clinical Features

- Trachyonychia may involve one or all of the nails.
- Trachyonychia may involve any portion of the nail plate.
- Nail pitting is a minimal form of trachyonychia, in which there are small pits present in the nail; this condition is often associated with psoriasis (Fig. 25.19).
- Changes may be focal and minimal or diffuse and severe, in which case the entire nail may be rough (Figs. 25.20 and 25.21).
- In rough nails in patients with dermatitis or trauma. there are often other irregularities of the nail plate, such as ribbing.

Diagnosis

- The diagnosis is usually established by clinical examination of the nail and correlation with a history of another skin disorder, such as alopecia areata, lichen planus, or psoriasis.
- In rare cases, a punch biopsy can be performed through the nail plate, with the specimen submitted for histologic analysis.

Treatment

- Trachyonychia is difficult to treat. Because it does not affect the patient's overall health, no treatment is required unless the patient desires it. If an underlying condition is present (e.g., alopecia areata, lichen planus, psoriasis), often the best therapy involves treatment of the underlying condition.
- For patients with rough nails secondary to alopecia areata, dermatitis, or psoriasis, use of a potent topical corticosteroid (e.g., clobetasol), applied qd or bid to the proximal nail fold, may occasionally be helpful. Intralesional triamcinolone into the proximal nail fold is more effective, but is painful, and few patients think that the discomfort is worth the result.
- In a double-blind randomized trial of patients with nail pitting due to psoriasis, tazarotene, 0.1% gel, applied nightly for 6 months, was shown to improve the condition.
- For patients with rough nails due to self-inflicted trauma, behavior modification therapy is useful.

Fig. 25.19. Patient with classic plaque psoriasis, with numerous nail pits. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.20. Trachyonychia that involved all the nails in a child with twenty-nail dystrophy.

Fig. 25.21. Severe trachyonychia in a patient with alopecia areata.

Nail Clubbing ICD10 code R68.3 (acquired)

Pathogenesis

Nail clubbing is caused by overgrowth of the soft tissue of the fingertip, resulting in increased curvature of the nail plate in the horizontal and longitudinal axes. When viewed from the side, the angle between the nail plate and proximal nail fold (Lovibond angle) is greater than 160 degrees (the upper limit of normal) and often exceeds 180 degrees. The mechanism of this process is unknown. Although some cases can be inherited or idiopathic, acquired nail clubbing can be a sign of systemic disease, especially pulmonary disease (e.g., malignancy, pneumonia, bronchiectasis, emphysema) or, less often, cardiovascular disease (e.g., congestive heart failure, congenital heart defects, atrial myxoma) or gastrointestinal disease (e.g., ulcerative colitis, primary biliary cirrhosis).

Classification of Nail Clubbing

- Inherited
- Acquired
- Idiopathic

Clinical Features

- Nail clubbing usually affects all the digits of the hands and feet.
- There is an overgrowth of soft tissue of the pulp of the distal digit.
- Lovibond's angle exceeds 160 degrees (the upper limit of normal) and often exceeds 180 degrees (Fig. 25.22).
- The nail plate demonstrates increased curvature, longitudinally and horizontally, often with the longitudinal curvature being the most dramatic (see Fig. 25.22).

Diagnosis

- The clinical presentation is diagnostic.
- When clubbing is discovered, the history should be expanded to determine if the condition is lifelong or if there is a family history of similar-appearing nails (Figs. 25.23A and 25.24).
- A complete review of systems should be performed on all patients with nail clubbing to direct any additional evaluation.
- A chest x-ray is recommended for all persons with acquired nail clubbing (see Fig. 25.23B).

Treatment

- There is no effective treatment for nail clubbing, but any underlying condition that is discovered should be managed.

Clinical Course

Treatment or removal of the cause of acquired clubbing may improve the condition (partially), but once considerable soft tissue overgrowth of the distal digits has occurred, there is no complete resolution.

Fig. 25.22. Lateral view of nail clubbing, with a Lovibond's angle that exceeds the normal upper limit of 160 degrees.

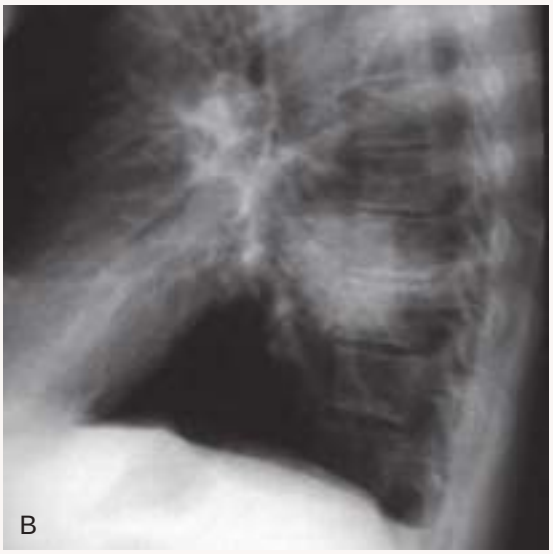

Fig. 25.23. (A) Acquired nail clubbing in a woman who presented with shortness of breath due to carcinoma of the lung as shown below left. (B) Chest x-ray of a patient who presented with digital clubbing. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.24. Familial clubbing in a 20-year-old man. His father had identical nail changes. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Habit Tic Deformity (Onychotillomania) ICD10 code F95.0

Pathogenesis

A so-called habit tic deformity of the nail, less often referred to as onychotillomania, is a common nail abnormality that occurs in persons with a repetitive habit of pushing the nail cuticle back and/or picking at the nail itself. It is this mechanical insult that produces a characteristic deformity of the nail(s).

Clinical Features

- Patients are usually adults and have usually had the nail condition for years or even decades.
- The thumbnails are usually affected, with dystrophic changes being unilateral or bilateral.
- The cuticle is often pushed back, exposing an enlarged lunula. The cuticle may also be hyperkeratotic.
- The characteristic finding is central nail dystrophy that manifests as multiple transverse ridges of variable size, giving a washboard appearance to the nails (Figs. 25.25–25.27).
- In some patients with habit tic, the grooves in the nail may be discolored.

Diagnosis

- In an adult, the clinical presentation of washboard nails, with variable damage to the cuticle, is essentially diagnostic (see Figs. 25.25 and 25.26).
- The only other nail condition that is difficult to differentiate is so-called median nail dystrophy (Heller disease), which is a rare acquired nail dystrophy characterized by a thin longitudinal split or deep groove with smaller transverse ridges, yielding a fir tree pattern of one or both thumbnails (see Fig. 25.27). It is very important to realize that although some dermatologists consider this a separate disease (a unique condition), other dermatologists simply consider this to be subset of habit tic deformity.

Treatment

- The condition is benign, and no treatment is required. A candid discussion of the cause may produce behavior modification, with improvement, but the success rate is low.
- Having the patient cover the affected nail(s) with tape (or bandages) may reduce or eliminate the repetitive trauma, but this requires a motivated and compliant patient.
- An alternative topical approach is application of cyanoacrylate glue once or twice a week at the proximal nail plate and cuticle, again with the goal being to interrupt the damage caused by the repetitive behavior. However, this may also serve as a nidus for additional picking.
- Oral selective serotonin reuptake inhibitors (SSRIs) have been used with success, but, given the relatively minimal nature of this disorder, it is not recommended unless there are other conditions responsive to such drugs (e.g., anxiety disorder, depression).

Clinical Course

If the habit tic can be controlled or interrupted, the nail will usually regrow, without permanent sequelae.

Fig. 25.25. Patient with bilateral habit tic deformity with washboard nails that are discolored from debris, chemicals, and/or other external agents. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.26. Patient with bilateral habit tic deformity, with prominent lunula.

Fig. 25.27. Patient with characteristic fir tree dystrophy of the thumbnail in a median nail dystrophy. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Nail Discoloration ICD10 codes (numerous)

MULTIPLE ETIOLOGIES

Pathogenesis

Discolored nails can result from external (e.g., nail polish, topical medications) or internal sources (e.g., oral silver ingestion, melanin). Moreover, nail discoloration can occur in all nail components of the nail apparatus, including the nail plate, nail bed, and cuticle, or only in portions of the nail apparatus, such as the lunula or nail plate. Color changes may be induced by a variety of compounds and/or structural abnormalities, including melanin, parakeratosis (retained nail plate causing a white color), serum (retained in the nail plate and causing a yellow color), vascular changes in the nail bed, or exposure to carotenoids and medications. There are hundreds of causes of nail discoloration; the adjacent box is only a partial list.

Causes of Nail Discoloration

Black Nails
- Melanoma
- Subungual hematoma

Brown Nails
- Azidothymidine (AZT; zidovudine)
- Cyclophosphamide
- Hydroquinone (orange-brown)
- Normal variation
- Melanocytic tumors

Blue-Gray Nails
- Antimalarials
- Tetracycline antibiotics
- Silver (argyria)
- Wilson disease

Green Nails
- *Pseudomonas* infection

White Nails
- Leukonychia mycotica
- Mees lines
- Muehrcke lines
- Punctate leukonychia
- Terry nails

Yellow Nails
- Yellow nail syndrome

Clinical Features

- Nail discolorations may affect those in any age group.
- Depending on the cause, one or more nails may be affected.
- Color changes include brown (Figs. 25.28–25.31), black (Fig. 25.32), purple-black (Fig. 25.33), white (Fig. 25.34), blue-gray (Figs. 25.35 and 25.36), green, or yellow (Fig. 25.37) and any variation thereof.
- Nail discoloration may occur on the surface, in the nail plate itself, or beneath the nail plate in the nail bed.
- Nail discolorations are asymptomatic.
- Some nail discolorations can occur with other nail abnormalities. Melanoma may cause discoloration of the nail plate, with extension of pigment onto the proximal nail fold (Hutchinson sign). Similarly, the green color of a *Pseudomonas* infection may be associated with onycholysis.

Diagnosis

- The diagnosis is established via a medication history, exposure to topical agents, and history of other known systemic diseases. Patients with a solitary discolored nail are more likely to have an infectious process, trauma-related process, or neoplastic process (including a melanocytic tumor) as the cause, whereas patients with multiple involved nails are more likely to have a systemic cause.
- In addition to the color involved, the location of the dyschromia is also important. For example, excessive silver ingestion (argyria) typically affects the lunula, whereas the use of AZT for HIV/AIDS usually produces transverse brown bands.
- In cases in which the pigment lies on on the surface of the nail, it can be removed by shaving the top of the nail plate with a scalpel. For example, the brown color induced by topical hydroquinone and iodine compounds and the white color of leukonychia mycotica are removed (in whole or in part) when scraped with a scalpel blade.

Treatment

- Treatment is dependent on identification and avoidance of the cause.
- Resolution will occur as the stimulus is removed and normal nail growth displaces the affected nail. At present, there is no way to bleach the nail effectively to return it to its original color.

Fig. 25.28. Brown nails in addition to brown streaking can be a normal variant in nail coloration.

Fig. 25.29. Patient with brown nails due to repeated exposure to topical hydroquinone. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.30. Patient with yellow-brown discoloration from repeated exposure to an iodine-containing topical preparation. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.31. Marked dark brown melanonychia striata (nail lentigo) in a child. Note that the edge is straight, suggesting that this lesion is stable in size. (From the William Weston Collection, Aurora, CO.)

Fig. 25.32. Patient with acral lentiginous melanoma arising in a nail, with a positive Hutchinson sign (discoloration of the proximal nail fold).

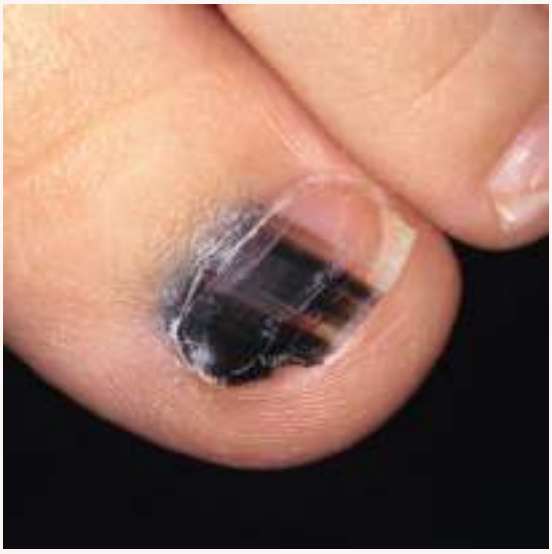

Fig. 25.33. Patient with a subungual hematoma demonstrating a purple-black discoloration. (Courtesy Dr. Joseph Morelli.)

Fig. 25.34. Patient with punctate leukonychia, the most common cause of white discoloration.

Fig. 25.35. Patient with admixture of gray and brown bands of the nail produced by treatment with AZT. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.36. Patient with blue-gray discoloration of the nail secondary to minocycline. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 25.37. Patient with onycholytic nail with yellow-green color due to *Pseudomonas*. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 26
Infestations, Stings, and Bites

Numerous arthropods can produce infestations, stings, and bites (see box). In addition to infestations, like scabies, arthropods can produce pruritic bites and local envenomation reactions that can result in tissue necrosis and ulceration. Moreover, some arthropods, such as ticks, mosquitoes, and flies, can be vectors of viral, rickettsial, bacterial, and protozoan infections that can cause skin disease or even systemic disease.

Arthropod Reactions: Selected Causes

Insects

- Ants (see Chapters 6 and 12)
- Bees
- Bedbugs (see Chapter 6)
- Fleas (see Online Chapter)
- Flies (see Chapter 13 and Online Chapter)
- Mosquitoes
- Sandflies (see Chapter 36)
- Wasps
- Yellowjackets

Arachnids

- Mites (see Chapters 6 and 12)
- Scorpions
- Spiders (also see Chapter 14)
- Ticks

IMPORTANT HISTORY QUESTIONS

Did you see what bit or stung you?

For arthropods that cause skin injury, rather than an infestation, the answer to this question, in an observant and reliable patient, establishes the diagnosis. However, one must not be misled because there is tendency for patients to assume an exogenous explanation, such as a spider bite, when another disease process is actually the cause. For example, in one study of 600 skin injuries attributed to "spider bites" by patients, 20% ultimately had some other disease process at play.

Did you capture, kill, or photograph the "bug" that bit or stung you?

Patients only rarely bring in the arthropod, but increasingly patients have used smartphones to document the offending arthropod.

Does anyone else that you know have a similar problem?

An affirmative response favors some infestation. A child with head lice may have siblings, playmates, or classmates with a similar problem. Head lice can also be transmitted by shared hats, combs, hairbrushes, and other fomites. Scabies is another infestation that often affects multiple persons in a household.

Are you sexually active?

This question is important in the assessment of pubic louse and scabies infestations. The answer may be useful in establishing the diagnosis, but the answer is even more important in identifying others who require treatment. It is also important to realize that pubic louse infestations are not always sexually acquired, and the condition may be passed from those simply in close contact with an infested individual.

Does the lesion itch, or is it painful?

Most arthropod reactions are pruritic, but if pain is reported, this raises the possibility of a spider bite, reduviid bug bite, sting reaction (e.g., bees, wasps, yellowjackets, scorpions), or infected arthropod bite.

How do you feel?

Systemic symptoms are important in some severe envenomation reactions, such as those of the black widow spider, or with multiple bee stings, or in any bite causing anaphylaxis.

IMPORTANT PHYSICAL FINDINGS

What is the distribution of the lesions?

Some arthropod reactions are more likely to involve specific body regions. For example, head lice involve the scalp and upper neck, whereas pubic lice involve the genital areas or, rarely, the eyelashes. Tick bites often involve the scalp, neck, or intertriginous skin folds.

What does the bite site look like?

Spider bites often demonstrate two closely apposed fang marks, whereas other arthropod reactions cause red papules, often without a visible punctum. Skin necrosis should prompt consideration of brown recluse spider bite, particularly if the tissue damage is relentlessly expanding.

Pediculosis Capitis ICD10 code B85.0

Pathogenesis

Pediculosis capitis is caused by infestation with the human head louse, *Pediculus humanus* var. *capitis* (Fig. 26.1). Head louse infestations are seen mostly in children, with 6 to 12 million new cases in the United States each year. The condition is least common in African American children.

Clinical Features

- Pruritus is variable, ranging from negligible to severe.
- Primary skin lesions consist of macular erythema or erythematous papules on the scalp. The posterior auricular scalp is often most affected (Fig. 26.2). Lymphadenopathy and a morbilliform eruption (pediculid) may be present.
- Secondary skin findings include excoriations and crusts.
- Lice are difficult to locate because the organisms rapidly relocate when the hair is disturbed. However, nits (louse eggs) are affixed to hair shafts and are usually easy to locate (Fig. 26.3).

Diagnosis

- Any dermatitis on the scalp of a young child prompts concern for head louse infestation.
- Posterior auricular or cervical lymphadenopathy should raise the index of suspicion further.
- The diagnosis is established by the visualization of nits on scalp hair (see Fig. 26.3) or by combing the hair with a fine-toothed comb (so-called nit comb) to extract the eggs or lice (Fig. 26.4).

Treatment

- Permethrin, 1% shampoo, has been a long-standing treatment, and it is available over the counter (OTC). However, as of 2015, resistance to permethrin was reported in 25 states. Also, permethrin is not ovicidal, so nits must be removed manually, and a second treatment with permethrin must be applied, 7 to 10 days after first use.
- Malathion, 0.5% lotion (Ovide), kills lice and eggs rapidly, although resistance has been reported. It can be used in children 6 years of age and older. Malathion lotion is flammable and expensive.
- Pyrethrins with piperonyl butoxide are available OTC and can be used in children 2 years of age and older. Some resistance has been reported in the United States. A second treatment is needed 7 to 10 days later.
- Ivermectin may be used as a 0.5% lotion or as a single-dose oral treatment (200 μg/kg). It is not ovicidal. A second treatment is recommended, 7 to 10 days after the first, to kill late-hatching organisms.
- Benzyl alcohol, 5% lotion, kills lice but is not ovicidal, and a second treatment is needed 7 days after the first treatment to kill late-hatching lice organisms. It can be irritating to the skin.
- Lindane 1% (Kwell), formerly a first-line agent, is now a second-line agent because of toxicity; use is advocated only when other treatments have failed.
- Lice require hair to complete their life cycle, and shaving of the scalp is an alternative therapy. Nit removal with combs (wet combing) is a useful adjunctive measure. Diluted vinegar, 8% formic acid, and a specially formulated enzymatic cream rinse may be helping in removing nits.

Clinical Course

The American Academy of Pediatrics (AAP) and the National Association of School Nurses (NASN) are opposed to so-called no-nit policies, and the presence of nits should not bar a child from returning to school.

Fig. 26.1. Human head louse. It is indistinguishable from the body louse. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 26.2. Patient with posterior scalp dermatitis due to head lice infestation. Nits were difficult to find. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 26.3. Patient with extensive infestation by numerous nits. Nits are red-brown before hatching and light tan or white after hatching. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 26.4. Microscopic appearance of an empty egg casing. Suspected nits should be examined microscopically to differentiate from white hair casts that surround hair shafts.

Pediculosis Pubis ICD10 code B85.3

Pathogenesis

Pediculosis pubis is due to infestation with the pubic louse, *Pthirus pubis*, also known as the "crab" louse (Fig. 26.5). Pubic louse infestations are seen primarily in sexually active young adults.

Clinical Features

- The infestation usually affects pubic hair. Less often, it affects the eyelashes or scalp of black children.
- Pruritus is variable, ranging from negligible to severe.
- Primary skin lesions, if present, consist of macular erythema or erythematous papules in the genital region.
- Secondary skin findings include excoriations and crusts.
- Nits (eggs) vary from a few to many in number (Fig. 26.6). The nits appear red-brown before hatching and light tan or white after hatching.
- Typically, the lice are easily found, and are located at the base of the hair shafts. The lice appear as tan, crablike, flattened insects, with three pairs of legs and large pincer claws (Fig. 26.7).

Diagnosis

- Dermatitis in the genital area of sexually active adults should raise concern for pubic louse infestation.
- Severe infestations may be associated with brownish-red discoloration of the underwear (Fig. 26.8) or a blue-purple discoloration of the skin (maculae ceruleae).
- The diagnosis is established by visualization of nits or pubic lice on the pubic hair. When taken off the body, the pubic louse moves slowly, and it may appear to shake.

Treatment

- Permethrin, 1.0% (Nix), is available OTC. It should be applied for 10 minutes and then rinsed. Resistance, while reported in the United States, is not as widespread as resistance among head lice.
- Pyrethrins synergized with pyrethrins (e.g., A-200 Shampoo, Clear Lice System, RID Mousse, RID Shampoo, Pronto) are available OTC. Again, resistance has been reported to these agents in some areas.
- Malathion, 0.5% (Ovide), is a second-line treatment that kills lice rapidly, including permethrin-resistant strains, but it has not been formally approved by the US Food And Drug Administration (FDA) for the treatment of pubic lice.
- Topical and single-dose oral ivermectin (200 μ/kg) has been reported to be effective against pubic lice infestations, but it is not ovicidal and treatment must be repeated in 7 to 10 days to kill late-hatching lice. It has not been formally approved by the FDA for the treatment of pubic lice.
- Shaving of pubic hair is an effective alternative or adjunctive therapy.
- Lindane, 1% (Kwell), the former treatment of choice, is now a second-line drug because of toxicity and is only recommended when other treatments have failed.
- Involvement of the eyelashes must not be treated with anything oculotoxic. Typically, eyelash involvement is treated only with ophthalmic-grade white petrolatum to smother the organisms.

Clinical Follow-up

All sex partners in the past 30 days should be informed that they are at risk for infestation, and they should be treated. Sexual contact should be avoided until the patient and sex partners have been successfully treated and re-evaluated to rule out persistent infestation. Persons with pubic lice should be evaluated for sexually transmitted disease (STD).

Fig. 26.5. Crab louse. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 26.6. Patient with numerous tan to brownish nits attached to hair shafts of the pubic area. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 26.7. Close-up of a crab louse attached to hair shafts of a patient. Several brown nits are also present. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 26.8. Patient with massive crab louse infestation causing brownish discoloration of the underwear. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Tick Bites ICD10 code (site dependent)

Pathogenesis

There are more than 800 species of hard ticks (Fig. 26.9) that feed by attaching to skin. Relevant species vary throughout the country. Ticks attach by inserting a long mouth part, called a hypostome, into the skin. The hypostome (Fig. 26.10) is covered with barbs to resist removal. Some species of ticks, such as *Dermacentor*, secrete a cement-like material that further solidifies attachment to the host. Ticks are responsible for the transmission of numerous vector-borne diseases, including Lyme disease (Fig. 26.11).

Clinical Features

- Tick bites usually occur in the spring and summer.
- Ticks may attach to any skin site but prefer protected areas, such as body folds and the scalp.
- Ticks produce an anesthetic-like substance to keep the feeding site asymptomatic, but, once the tick drops off, the site often becomes pruritic.
- In addition to a puncture site, the surrounding area demonstrates variable redness and swelling (Fig. 26.12).

Diagnosis

- In most cases, the diagnosis is established easily and simply based upon the clinical appearance.
- Rare cases may be mistaken for thrombosed acrochordons or pedunculated nevi, and the diagnosis can be established by doing a deep shave or punch biopsy.

Treatment

- Optimal removal is accomplished by grasping the tick mouth parts with tweezers and gently pulling the tick straight out, in the reverse direction that the hypostome was inserted into the skin (Fig. 26.13). Steady backward pulling works best. In most cases, the tick can be removed intact.
- If the hypostome breaks off and remains in the skin, it should be treated as a foreign body and should be removed as such, just as a wood splinter would be removed. This may include simply punch-excising the area.
- In endemic areas, prophylactic treatment of Lyme disease may be indicated.

Clinical Course

Most tick bites resolve spontaneously over a period of weeks, but rare cases may demonstrate residual erythema for months; this is a so-called persistent tick bite reaction.

Fig. 26.9. Hard tick (Dermacentor species) tick on grass blade awaiting its next victim. (From https://www.stockfreeimages.com/000005418159.)

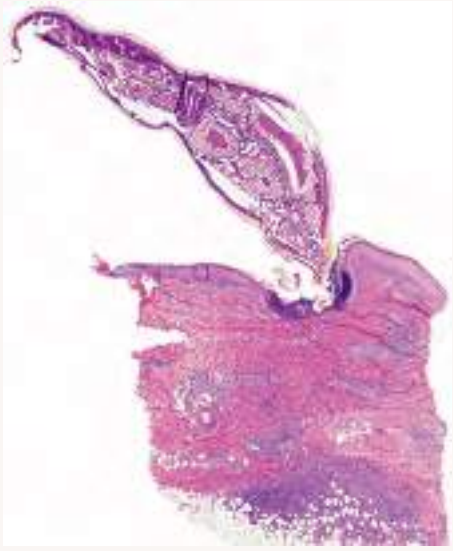

Fig. 26.10. Biopsy of an attached tick with hypostome embedded in the dermis (H&E; 20×). (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 26.11. Immature and mature forms of hard ticks (Ixodes species), which are the most common vectors of Lyme disease. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 26.12. Patient with attached, partially engorged hard body tick, with inflammatory host response. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

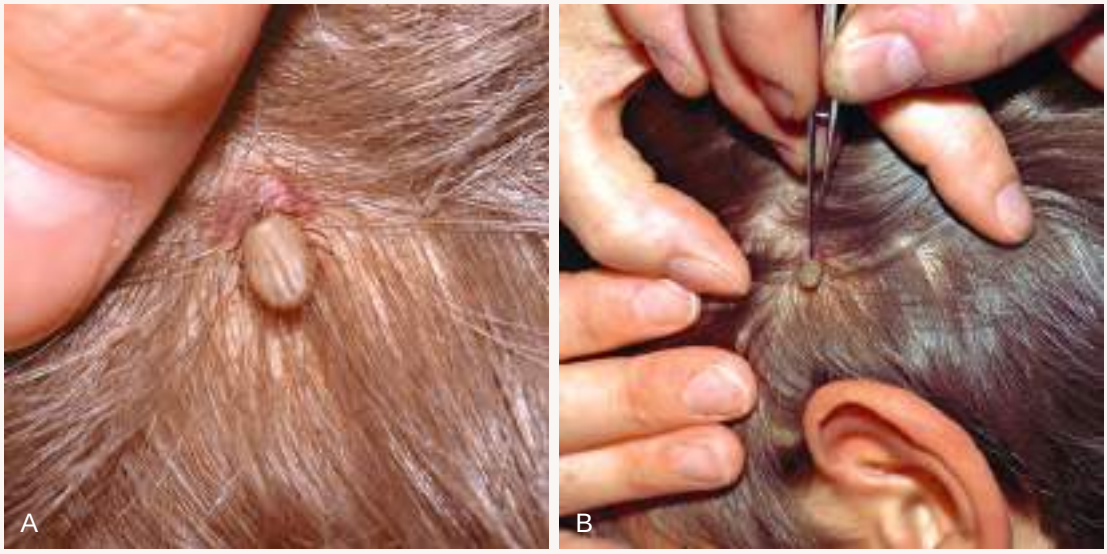

Fig. 26.13. A, Attached partially engorged tick on the scalp of a child, with an inflammatory host response. B, Proper removal of tick by grasping the head with forceps and gently pulling on the tick until it releases. (From the William Weston Collection, Aurora, CO.)

Stings (Bees, Wasps, Yellowjackets)

ICD10 code T63.4 (two digits, depending on species and circumstances)

Pathogenesis

The order Hymenoptera contains a number of stinging insects including bees, hornets, wasps, and harvester and fire ants. The stinging apparatus varies with the species, but in general, it consists of a barbed stinger attached to a venom sac. With bee stings (Fig. 26.14), the stinger remains attached to the skin, and the bee dies after stinging. Hornets and wasps can sting multiple times with the same stinger because barbs are not present. Biting ants anchor themselves to skin with their mandibles and then pivot, stinging multiple times around a central anchor point.

Clinical Features

- Stings from Hymenoptera can be singular or multiple and produce immediate pain, followed by variable burning and pruritus.
- The sting yields an erythematous wheal (Fig. 26.15) that may have central blanching and a punctum at the site of penetration.
- Most stings subside over hours, but variable erythema and edema can persist for up to 7 days in some patients. Rarely, considerable massive edema may produce a bullous appearance (Fig. 26.16).
- With a large number of stings (>50), systemic reactions can develop due to vasoactive amines, peptides, and enzymes. The median lethal dose is estimated to be about 19 strings/kg body weight, which is about 500 stings in an average adult.
- Anaphylaxis can occur within minutes or, rarely, as late as 72 hours after a sting. At least 50 deaths/year in the United States have been attributed to an anaphylactic reaction to Hymenoptera stings.

Diagnosis

- The clinical presentation and history are usually diagnostic.
- In rare cases, a patient will bring in a photo or the actual insect for identification (Figs. 26.17 and 26.18).

Treatment

- Anaphylaxis is a medical emergency. In adults, it should be treated with 0.3–0.5 mL of subcutaneous epinephrine (1:1000 solution). Half-strength dilutions are used in children. Antihistamines, corticosteroids, bronchodilators, vasopressors, intravenous fluid, and oxygen may also be necessary.
- In the case of bee stings, the stinger should be removed as soon as possible. The venom sac continues to pump through the stinger apparatus but empties in about 1 minute. Stingers can be removed by flicking with a credit card or something similar to avoid squeezing the sac.
- Cool compresses can alleviate discomfort.
- Patients with anaphylaxis should be given education and a prescription for self-administered epinephrine (e.g., EpiPen). These patients should also wear a medical tag that identifies the allergy.

Fig. 26.14. Bee stinger removed from the skin. Barbs located at the end were sheared off during removal. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 26.15. Marked erythema at the site of a bee sting. The sting apparatus depicted in Fig. 26.14 was removed from this site. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 26.16. Patient with bee sting of the toe, with massive edema resembling a bullous reaction. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 26.17. Western yellowjacket *(Vespula pennsylvanica)* eating at a picnic table. Yellowjackets are aggressive and account for up to 90% of all stings in some parts of the United States.

Fig. 26.18. European paper wasp *(Polistes dominulus)* in Colorado, another common cause of stings. Although not aggressive as yellow jackets, these wasps will sting to protect a nest.

Spider Bites ICD10 code T63-301A

The Brown Widow Spider

The brown widow spider has been expanding its range into the southeastern states and California. Despite being slightly smaller, the brown widow spider will kill and replace the black widow spider in the environment.

The venom of the brown widow spider is identical to that of the black widow spider, but the injected amount is less, and most bites produce only local reactions.

Pathogenesis

Spiders are arachnids, with four pairs of legs and no wings, and most have a silk-spinning apparatus at the posterior end. There are more than 20,000 species worldwide and over 3000 species in the United States. Almost all spiders use venom to hunt, but most spiders do not have fangs capable of penetrating human skin. About 50 spider species can produce skin reactions in humans, with the most important being the black widow spider (Fig. 26.19), brown widow spider (Fig. 26.20), brown recluse spider (see Chapter 14), wolf spider, hobo spider, black house spider, sac spider, and tarantula. With tarantulas, it is often the stinging hairs and not the bite that cause a skin reaction. More than 2600 black widow spider bites are reported each year in the United States.

Clinical Features

- The clinical presentation of a spider bite varies with the species and amount of venom injected.
- Black widow and brown widow spiders inject α-latrotoxin, which results in depletion of acetylcholine at motor nerve endings and triggers release of catecholamines. There is an immediate pinprick sensation and, later, dull pain. In cases of severe envenomation, patients can develop muscle rigidity and fasciculation, headache, weakness, abdominal pain, salivation, respiratory paralysis, seizures, and, rarely, death.
- Brown recluse spider bites contain at least eight components, but sphingomyelinase D is the agent responsible for the characteristic expanding tissue necrosis, which may necessitate surgical intervention.
- Most other venomous spiders in the United States produce only local tissue reactions. On close inspection, spider bites may be seen to have two puncture marks from the spider fangs.
- In contrast to most other arthropod reactions, spider bites are often painful rather than pruritic. However, some species that inject histamine, such as the hobo spider, can cause pruritus at the bite site.
- A necrotic center may result from fusion of the two puncture sites caused by the fangs (Fig. 26.21).

Diagnosis

- The complete clinical presentation of a black widow spider bite is typically diagnostic.
- Bites from less toxic species are difficult to differentiate from furuncles and other insect bites.
- Patients may have seen the spider or may bring in a dead spider, and the diagnosis can then be established.
- Although spider bites are probably overdiagnosed, a painful bite with two puncture wounds, or an older lesion with an elongated necrotic center, suggests the diagnosis.

Treatment

- Black and brown widow spider bites are best treated in an emergency room with antivenom. Adjunctive treatments include calcium gluconate for hypocalcemia, benzodiazepines, and opioids.
- Brown recluse spider bites may require surgical intervention. To date, no well-controlled human studies have shown dapsone to affect the clinical outcome of a brown recluse spider bite.
- For minor spider bites, the site can be cleaned and treated with cool compresses and pain medication.
- For all spider bites, a tetanus booster may be prudent, and the site should be monitored for signs of infection (Fig. 26.22).

Fig. 26.19. The infamous female black widow spider demonstrating the characteristic red hourglass on the ventral surface. (From https://www.stockfreeimages.com/4421414.)

Fig. 26.20. The lesser known female brown widow spider that is primarily found in the southeastern United States and California. This one was photographed in Alabama.

Fig. 26.21. Patient with painful necrotic irregular bite site surrounded by marked erythema and induration. Based on the description of the spider, this may have been due to a sac spider. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 26.22. Patient with presumed spider bite with secondary staphylococcal infection. In the absence of a spider or good description, this type of lesion is hard to differentiate from a furuncle. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 27
Discolorations of the Skin

Discolorations of the skin include disorders of hypopigmentation (lightening), disorders of hyperpigmentation (darkening), and disorders caused by abnormal deposition of any pigment that alters skin color. The abnormal pigmentation can be endogenous (e.g., iron in hemochromatosis) or exogenous (e.g., a medication, such as minocycline) in origin.

Selected Causes of Skin Discoloration

Depigmentation
- Albinism
- Piebaldism
- Vitiligo

Hypopigmentation
- Nevus depigmentosus
- Pityriasis alba
- Postinflammatory hypopigmentation
- Tinea versicolor

Hyperpigmentation
- Acanthosis nigricans
- Addison disease
- Confluent and reticulated papillomatosis
- Melasma (chloasma)
- Postinflammatory hyperpigmentation
- Tinea versicolor

Yellow Discoloration
- Carotenoderma
- Jaundice
- Quinacrine

Blue-Gray Discoloration
- Amiodarone
- Argyria (silver)
- Chloroquine
- Chlorpromazine
- Hydroxychloroquine
- Minocycline

IMPORTANT HISTORY QUESTIONS

How long has the abnormal color been present?

Some discolorations are congenital (e.g., albinism, nevus depigmentosus), but most are acquired (e.g., vitiligo).

How are you treating this discoloration?

Many patients use over-the-counter (OTC) or prescription remedies that may alter the clinical appearance.

Is the color change stable, progressive, or resolving?

Some disorders, such as pityriasis alba on the face of a young child, are waxing and waning. Other conditions, such as albinism, are largely stable. Still yet, other conditions are progressive. For example, dyspigmentation from minocycline worsens until discontinuation.

Do you have photos of the affected area, taken at an earlier time, when the pigmentation was not present?

Although not always the case, sometimes discoloration may be better appreciated with a prior frame of reference.

What medications are you taking?

Numerous drugs can alter skin color, with some common drugs listed in the box.

IMPORTANT PHYSICAL FINDINGS

What is the color of the abnormal skin?

This is a critical physical finding because it will determine what questions regarding the history will be necessary.

What is the distribution of the color change?

Some discoloration is unilateral (e.g., segmental vitiligo) or localized to certain areas (e.g., pityriasis alba affects the face), whereas other conditions are generalized (e.g., jaundice, albinism).

Is the change in pigmentation sharply demarcated?

Some forms of dyspigmentation or depigmentation (e.g., vitiligo) have sharp demarcation, whereas other forms (e.g., postinflammatory hypopigmentation) are more poorly demarcated.

If it is not clear whether something is hypopigmented or depigmented, use your Wood light.

Use of a Wood lamp is discussed in more detail in Chapter 2. In general, disorders with true depigmentation (e.g., vitiligo, piebaldism) accentuate greatly with use of a Wood lamp, whereas disorders of lesser hypopigmentation (e.g., postinflammatory hypopigmentation) accentuate to a lesser degree.

Vitiligo ICD10 code L80

Pathogenesis

Vitiligo is an autoimmune disease characterized by the destruction of melanocytes that produce melanin pigmentation for the skin. It is widely thought that vitiligo is an autoimmune disease, but other mechanisms of melanocyte death have been postulated by some authors. There is likely also a hereditary component because 8% of adults with vitiligo have similarly affected family members. Vitiligo is relatively common, with about 1% to 2% of the population affected. The condition is more noticeable in those with darker skin. The condition is associated with autoimmune disorders of other tissues and organ systems, such as Graves disease, Addison disease, Hashimoto thyroiditis, and alopecia areata.

Clinical Features

- Vitiligo can present at any age, but most cases of vitiligo occur before 20 years of age.
- Early lesions of vitiligo may demonstrate a faint rim of erythema or an eczematous border (Fig. 27.1).
- The primary lesion is a depigmented macule, with a sharply demarcated border that may be scalloped.
- Lesions may be symmetric (Fig. 27.2), focal, linear (Fig. 27.3), or generalized (e.g., vitiligo universalis).
- Vitiligo can involve mucosal surfaces, such as the lips or genitalia (Fig. 27.4).

Diagnosis

- The clinical presentation of macular depigmentation in characteristic anatomic locations is usually diagnostic.
- Wood lamp examination is useful because it accentuates true depigmentation and thereby distinguishes vitiligo from other conditions of hypopigmentation, with lesser accentuation.
- Early lesions may require a biopsy. It is useful to take 3-mm or larger punch biopsies from lesional and normal skin so that the dermatopathologist can compare the pigment (this often requires a special stain for melanin) and judge melanocyte density (this requires an immunohistochemical stain for melanocytes) between affected and unaffected sites.

Treatment

- Vitiligo is a chronic disease that is not typically managed in an acute care environment. Any response to therapy is slow and incomplete.
- Initial care recommendations in an acute setting may include sunscreen use to protect the area from sunburn and to diminish differences between the adjacent tanned skin and depigmented skin, a medium-potency topical corticosteroid (0.1% triamcinolone) for affected areas of the trunk and extremities, or 0.1% hydrocortisone valerate for facial lesions.
- The patient should be referred to a dermatologist who may continue topical therapy (perhaps with alterations in corticosteroid strength), or who may employ ultraviolet (UV) light therapy. Psoralen plus UVA or narrow-band UVB therapy may be initiated. In one randomized, double-blind study, it was found that narrow-band UVB therapy is superior to PUVA therapy, but there are certain cases that do not respond well to any modality.
- Topical tacrolimus (0.03%–0.1% ointment bid) is an alternative to topical corticosteroid therapy.
- Topical pimecrolimus (1% cream bid) for at least 3 months is also an alternative to topical corticosteroids.
- Rare cases are treated surgically (e.g., melanocyte transplantation), but this is the domain of the specialist.

Clinical Course

Vitiligo cannot be cured. Many patients continue to develop new lesions of vitiligo over their lifetime. In general, about 70% of patients with vitiligo improve with therapy. A systematic review of the literature, combined with the results of patient questionnaires, suggested that topical corticosteroids are the best therapy for localized disease, and that narrow-band UVB is the best therapy for generalized disease.

Fig. 27.1. Patient with early vitiligo demonstrating erythema and scale at the advancing edge. This degree of inflammation is unusual. (From the Joanna Burch Collection, Aurora, CO.)

Fig. 27.2. Patient with severe vitiligo demonstrating the tendency for a symmetric distribution. (From the Walter Reed Army Medical Center Collection, Washington, DC.)

Fig. 27.3. Segmental vitiligo in a young child affecting the lateral thorax and arm.

Fig. 27.4. Patient with vitiligo of the mucosal surfaces of the lip demonstrating a sharp demarcation between depigmented areas and normal skin.

Pityriasis Alba ICD10 code L30.5

Pathogenesis

Pityriasis alba is a low-grade form of eczema that presents, by definition, as hypopigmentation. Although the pathogenesis is not fully understood, studies suggest it is a variant of atopic dermatitis. Photoexposure accentuates the condition because light preferentially tans normal adjacent skin.

Clinical Features

- Pityriasis alba usually affects children between the ages of 6 and 12 years of age. In most series, 90% of patients are within this age range. Less often, the condition affects younger children or older adolescents.
- Pityriasis alba is more noticeable in children with darker skin.
- The condition is asymptomatic in most cases. Occasionally, patients report mild pruritus.
- The face, especially the cheeks, is most often affected. Less often, it affects the upper extremities.
- Early lesions consist of round to oval areas of subtle erythema, with variable fine white scale.
- Mature lesions demonstrate ill-defined patchy hypopigmentation with round to oval areas, with a subtle fine white scale (Figs. 27.5–27.7).

Diagnosis

- The clinical presentation is diagnostic in most cases. A history of atopic dermatitis or an atopic diathesis (see Fig. 27.6) in the patient or in family members supports the diagnosis.
- The differential diagnosis includes tinea versicolor, early vitiligo, postinflammatory hypopigmentation, and nevus depigmentosus. Hypopigmented mycosis fungoides is also in the differential diagnosis, but this is an extremely rare condition (less than one case per 4 million persons per year). Moreover, it is unusual for hypopigmented mycosis fungoides to occur exclusively on the face.
- Tinea versicolor may be excluded by performing a potassium hydroxide (KOH) examination.
- Vitiligo can usually be excluded on clinical grounds because it results in depigmented skin, whereas pityriasis alba results in hypopigmented skin. This difference can be accentuated with a Wood lamp examination (see Chapter 2). Also, the primary lesions of vitiligo are usually sharply demarcated, whereas pityriasis alba manifests a gradual transition to normal skin at the edges of lesions.
- Nevus depigmentosus can usually be excluded because it is solitary, sharply demarcated, and lacks any scale.
- Rare cases may require a 3-mm punch biopsy. Histologic examination usually demonstrates a low-grade spongiotic dermatitis with variable scale that is consistent with pityriasis alba.

Treatment

- The condition is benign and self-limited, and reassurance alone is a reasonable option.
- Broad-spectrum sunscreens lessen visible differences between the hypopigmented macules and adjacent tanned skin.
- Lubrication with urea-containing and lactate-containing moisturizers is an often employed treatment, but it typically takes weeks to months of use to observe a response.
- All patients should be switched to a mild facial soap, such as Dove, Cetaphil, or Aveeno.
- A low-potency topical corticosteroid, such as 1% hydrocortisone cream or 0.05% desonide cream may be beneficial in some cases.
- Topical tretinoin and topical pimecrolimus have been reported to be efficacious but are more costly.

Clinical Course

Individual lesions typically last from months to years—up to 7 years has been documented—but the condition is benign and without any consequences.

Fig. 27.5. Pityriasis alba demonstrating hypopigmented macules on the face. (From the Joanna Burch Collection, Aurora, CO.)

Fig. 27.6. Pityriasis alba on fair skin is usually more subtle. This patient also has background erythema from his atopic dermatitis.

Fig. 27.7. Patient with pityriasis alba of the arms. This is often confused with hypopigmented tinea versicolor.

Lichen Sclerosus et Atrophicus ICD10 code L90.0 (nongenital)

AUTOIMMUNE DISORDER

Pathogenesis

Lichen sclerosus et atrophicus (LSA) or, simply, lichen sclerosus, is a disorder characterized by an atrophic epidermis, altered collagen in the superficial dermis, and an overlying white or white-blue appearance to the skin. The terms *balanitis xerotica obliterans* and *kraurosis vulvae* have been applied to genital lesions of LSA in men and women, respectively. The pathogenesis of LSA is poorly understood, but the increased incidence of LSA with other autoimmune diseases (e.g., morphea) and the presence of autoantibodies directed against extracellular matrix protein 1 suggest LSA is an autoimmune disorder.

Clinical Features

- LSA may present at any age, from pediatric to geriatric age groups.
- The condition is more common in women.
- The anogenital region alone is affected in about 50% of cases, anogenital and extragenital disease is present in about 25% of cases, and only extragenital areas are affected in about 25% of cases.
- Extragenital LSA is common on the neck, wrists, and inframammary areas.
- Anogenital LSA in girls and women often demonstrates an hourglass-like or figure-eight configuration that surrounds the genitalia and anal region.
- Early LSA may be pruritic or asymptomatic.
- Primary lesions quickly evolve into white atrophic areas (Fig. 27.8), with variable telangiectasias.
- Some cases demonstrate surrounding brown hyperpigmentation.
- Variable features include hyperkeratosis and follicular plugging, fissures, blister formation (Fig. 27.9), hemorrhage (Fig. 27.10), and ulceration.
- Phimosis is a complication in uncircumcised men, and urethral stricture may also occur.
- Squamous cell carcinoma is a rare complication with chronic genital LSA.

Diagnosis

- The clinical presentation is usually diagnostic.
- A deep shave biopsy or punch biopsy (preferred) is useful in established lesions. Sampling early disease, with erythema alone, may not be diagnostic.

Treatment

- Potent topical corticosteroids, such as clobetasol, 0.5% ointment (applied qd or bid), is generally used initially, followed by a taper to less potent steroids as the condition improves.
- In a study of 85 pediatric and adult patients with LSA, topical tacrolimus, 0.1% ointment (applied bid for 16 weeks), produced complete clearing in 43% of patients and partial clearing in 34% of patients. This drug is an alternative for patients who do not wish to use topical corticosteroids. Tacrolimus does cause a burning feeling in about 20% of users.
- Surgical intervention and/or dilation are sometimes needed in men with phimosis or women with narrowing of the vaginal introitus.
- Systemic immunosuppression may be used in those with severe or recalcitrant LSA, but this is the domain of experts.

Clinical Course

In children, long-term follow-up data are limited. In the most insightful studies, about 50% of children had complete clearing by puberty, with the other 50% having disease that was better, stable, or worse. In adults, the disease is usually chronic, and the condition is sometimes progressive.

Fig. 27.8. Patient with classic truncal lichen sclerosus et atrophicus demonstrating an atrophic wrinkled epidermis, with a white color.

Fig. 27.9. Patient with lichen sclerosus et atrophicus of the penis demonstrating a hemorrhagic blister and white atrophic skin. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 27.10. Lichen sclerosus et atrophicus in a young girl demonstrating white atrophic skin and focal hemorrhage.

Acanthosis Nigricans ICD10 code L83

Selected Causes of Acanthosis Nigricans

- Obesity (most common)
- Malignancy
  - Adenocarcinoma of the gastrointestinal (GI) tract
- Endocrine disorders
  - Acromegaly
  - Cushing syndrome
  - Diabetes mellitus
  - Stein-Leventhal syndrome
- Drug-induced
  - Corticosteroids
  - Niacin
  - Nicotinamide
- Syndrome-associated
  - Bloom syndrome
  - Rud syndrome

Pathogenesis

Although acanthosis nigricans (AN) may seem to be a pigmentary disorder, because the skin appears brown, it is actually caused by subtle thickening of the stratum corneum with papillomatous hyperplasia of the epidermis. AN is associated with obesity, diabetes mellitus, some medications (e.g., niacin, nicotinamide), malignancy (as a paraneoplastic condition), and a number of rare genetic syndromes. Paraneoplastic (or malignant) AN can be seen in association with a number of malignancies, including lung carcinoma, breast carcinoma, and testicular carcinoma, but most cases are associated with GI carcinomas.

Clinical Features

- AN most often occurs in obese children.
- AN usually affects the skin of the axillae, neck, and other body folds (Figs. 27.11 and 27.12).
- AN may affect the dorsal hands and feet (acral acanthotic anomaly) and areola (Fig. 27.13).
- Mucosal involvement is seen only in paraneoplastic forms of AN.
- Affected skin appears velvety and hyperpigmented.
- Patients may complain that the affected skin appears dirty, even despite vigorous cleansing.
- AN may be associated with numerous acrochordons (see Fig. 27.12).

Diagnosis

- The clinical presentation, appearance, and associated conditions are usually diagnostic of AN.
- Rare cases may require a shave biopsy or 3- or 4-mm punch biopsy (preferred).

Treatment

- Treatment of the underlying condition is the best management. For example, in cases associated with obesity, the attainment of an ideal body weight may result in complete resolution.
- Topical 12% ammonium lactate lotion, available OTC and by prescription, may make the condition less noticeable.
- Topical tretinoin cream and glycolic acid lotion, both applied qd, are other options; some patients may tolerate use bid.
- Fish oil tablets and metformin have been reported to be of benefit in the literature, but this evidence is largely anecdotal and has not been subjected to vigorous trials.
- In rare cases, surgical excision, dermabrasion, and electrofulguration have been used, although the latter modality produces variable scarring.

Clinical Course

Acanthosis nigricans is typically a chronic condition, but if the driving force(s) can be removed or substantially improved (e.g., obesity, diabetes), AN will often resolve and/or substantially improve, typically over weeks to months.

Fig. 27.11. Patient with acanthosis nigricans of the neck, axillae, and dorsum of the hands.

Fig. 27.12. Patient with acanthosis nigricans of the axilla, with numerous acrochordons.

Fig. 27.13. Close-up of a patient with acanthosis nigricans of the nipple and areola that clearly demonstrates the papillomatous nature of this condition. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Confluent and Reticulated Papillomatosis ICD10 code L83

KERATINIZATION DISORDER

Pathogenesis

Confluent and reticulated papillomatosis of Gougerot-Carteaud (CRP) is an uncommon disorder with a distinctive clinical appearance. The cause of CRP is unknown, but it is thought to be a disorder of keratinization, perhaps precipitated by yeast *(Malassezia furfur),* bacteria *(Dietzia papillomatosis),* endocrine abnormalities (insulin resistance), or functional mutations in keratin 16. Histologically, CRP demonstrates a thickened stratum corneum (hyperkeratosis), with an acanthotic and elongated epidermal rete.

Clinical Features

- CRP affects chiefly adolescents and young adults of both genders (mean age, 15 years).
- CRP may affect any racial or ethnic group, with the highest incidence in whites.
- CRP has a characteristic distribution that includes the neck, upper trunk, and axillae. The midchest and upper back are also often involved. Few cases of CRP involve the face or extremities.
- CRP presents as tan to brown hyperpigmented, subtle, thin plaques, with varied yellow, light red, or orange hues (Figs. 27.14–27.16). In some areas, a reticulated pattern may become confluent. Close examination of lesions demonstrates subtle scale (see Fig. 27.16B).
- CRP is usually asymptomatic, but occasional patients report some mild pruritus.

Diagnosis

- In most situations, the diagnosis may be established on clinical grounds, based upon the patient's age, the distribution, and the distinctive reticular pattern of scale and discoloration.
- The differential diagnosis includes an unusual presentation of tinea versicolor (pityriasis versicolor), which is also characterized by tan, slightly scaly macules and plaques. However, a KOH examination will be positive in tinea versicolor and can help to distinguish between the two conditions.
- Rare cases may require a shave or punch biopsy to substantiate the diagnosis.

Treatment

- CRP is a condition without serious consequences, and reassurance alone is reasonable if the patient is unconcerned. Many patients desire treatment because of the cosmetic appearance of the rash.
- Controlled studies in CRP are lacking, but oral antibiotics, such as minocycline (50–100 mg PO bid for 6 weeks), are often used. Azithromycin and clarithromycin represent alternative agents.
- Topical tretinoin and salicylic acid–containing products desquamate the skin. Ammonium or sodium lactate–containing moisturizers may be used for the same reason.
- Oral isotretinoin has been used successfully, but with its serious side effects and teratogenic consequences, it is not often used for CRP unless there is also severe acne.

Clinical Course

Untreated, CRP typically last months or even years before spontaneous resolution.

Fig. 27.14. Patient with confluent and reticulated papillomatosis of Gougerot-Carteaud, with light reddish-brown reticulated lesions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 27.15. Patient with confluent and reticulated papillomatosis of Gougerot-Carteaud, with yellowish-brown reticulated lesions of the thorax. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 27.16. A, Dramatic confluent and reticulated papillomatosis of Gougerot-Carteaud, with dark brown reticulated lesions on an adolescent. B, Closer view demonstrates that the pigment is due to subtle papillomatous hyperplasia.

Addison Disease ICD10 code E27.1

Mechanisms for Addison Disease

- Destruction of adrenal glands
  - Autoimmune
  - Deposition disorders (e.g., amyloidosis)
  - Hemorrhage, infarction (e.g., Waterhouse-Friderichsen syndrome, antiphospholipid syndrome)
  - Infections (e.g., tuberculosis)
  - Metastatic disease in the gland
- Adrenal dysgenesis
  - Rare genetic syndromes
- Impaired steroid production
  - Genetic enzymatic deficiencies
  - Medications (e.g., azoles, rifampin, phenytoin)

Pathogenesis

Addison disease, or adrenal insufficiency, is an endocrine disorder caused by insufficient production of steroid hormones by the adrenal cortex. The condition is divided into primary adrenal insufficiency (destruction or impairment of the adrenal cortex), secondary adrenal insufficiency (reduced secretion of adrenocorticotropic hormone [ACTH] by the pituitary), and tertiary adrenal insufficiency (reduction in the area of the hypothalamus that produces corticotropin-releasing hormone). Hyperpigmentation of the skin occurs only in primary adrenal insufficiency, due to elevated levels of ACTH or related peptide fragments, which are closely related to melanocyte-stimulating hormone (MSH). The result is overproduction of melanin in the skin.

Clinical Features

- Addison disease may affect persons of any age, but the condition is most common in middle-aged women.
- Manifestations include diffuse hyperpigmentation that is not photodistributed (Fig. 27.17).
- Hyperpigmentation is accentuated in the palmar creases (Fig. 27.18A), on the gingiva (see Fig. 27.18B) and buccal mucosa, on the areola, and at sites of friction, including trauma and scars.
- Systemic symptoms include fatigue, muscle weakness, fever, weight loss, anxiety, nausea, diarrhea, and headache.

Diagnosis

- Diffuse progressive hyperpigmentation should raise concern for primary Addison disease.
- A careful review of systems should be performed.
- For confirmation, ACTH and cortisol levels should be determined.

Treatment

- Patients should be referred to an endocrinologist for appropriate studies and management.
- Corticosteroid replacement must be commenced under the guidance of the endocrinologist.

Clinical Course

With proper management and replacement therapy, most patients with adrenal insufficiency have a normal life span. With replacement therapy, skin pigmentation will return to normal.

Fig. 27.17. Young child who presented with unexplained diffuse darkening of her skin. Compare her skin color to the skin color in a photograph taken several years earlier. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 27.18. A, Patient with hyperpigmentation of the palmar creases. B, Marked hyperpigmentation of the gingiva in the same patient.

Jaundice ICD10 code R17

Origins
The word *jaundice* is derived from the word *jaune*, a French word that means "yellow."

Pathogenesis

Jaundice is a systemic disorder caused by elevated levels of bilirubin in the blood. Bilirubin is a breakdown product of red blood cells that is normally removed by the liver. Bilirubin can occur in conjugated and unconjugated forms. There are many causes of jaundice, but hepatocellular injury and biliary obstruction are the two most common causes. Hyperbilirubinemia precedes the development of clinical jaundice by several days. Adults demonstrate clinically detectable jaundice when bilirubin levels reach 2.5 to 3 mg/dL; infants may require levels as high as 6 to 8 mg/dL to produce appreciable jaundice.

Clinical Features

- Jaundice may affect persons of any age, from infants to geriatric populations.
- The entire mucocutaneous surface is affected, but the soft palate and sublingual areas are the sites where jaundice can first be appreciated.
- The skin discoloration varies from yellow to yellow-green in hue (Figs. 27.19–27.22).
- In contrast to carotenoderma, the scleral conjunctiva is affected in jaundice (scleral icterus; see Figs. 27.20–27.22).
- Patients frequently complain of pruritus, and the urine may be darker than normal.

Diagnosis

- The occurrence of yellow to yellow-green discoloration of the skin with scleral icterus is diagnostic.
- Liver function testing, serum bilirubin levels, and a complete blood count (CBC) are initial studies that should be performed in all cases.

Treatment

- Treatment of the primary disorder producing the elevated levels of bilirubin is key.
- There is no specific treatment of jaundice, with the exception of neonatal jaundice, for which ultraviolet light therapy is used to prevent irreversible brain damage.

Clinical Course

After the bilirubin levels are normalized, tissue-bound bilirubin dissipates over several days to a week.

Fig. 27.19. Patient with modest jaundice secondary to drug-induced hepatitis (DRESS syndrome). Note the associated macular erythema due to the drug eruption.

Fig. 27.20. Patient with modest jaundice and scleral icterus due to Alagille syndrome, a rare liver disorder. (From the William Weston Collection, Aurora, CO.)

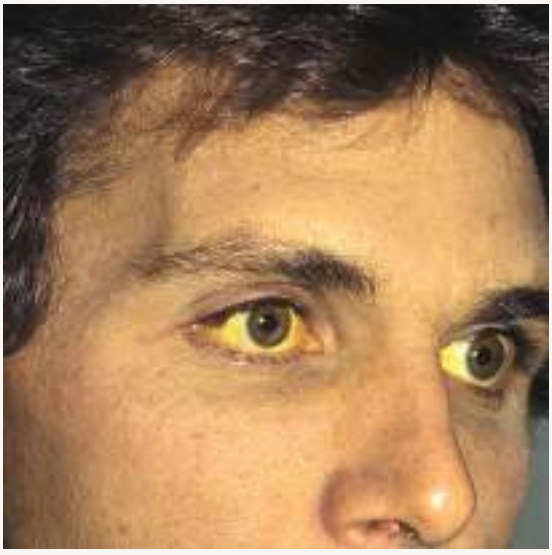

Fig. 27.21. Patient with jaundice, with yellow-green discoloration of skin and marked scleral icterus.

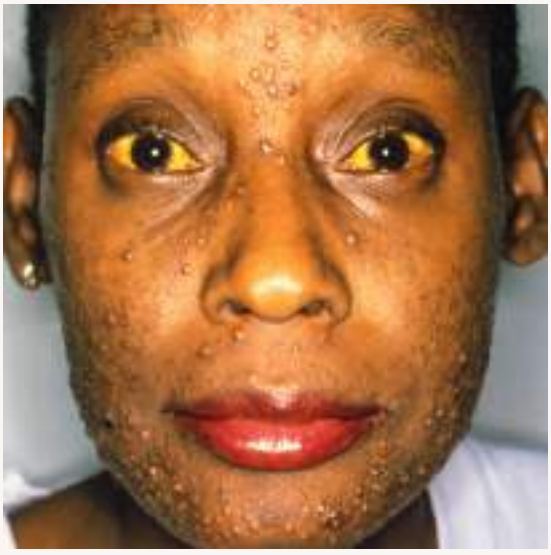

Fig. 27.22. Patient with jaundice and marked scleral icterus due to primary biliary cirrhosis. The papules are eruptive xanthoma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Carotenoderma ICD10 code L81.9

Origins
Carotenoids are found in the stratum corneum of normal skin and contribute to normal skin color and UV protection.

So-called tanning pills can contain canthaxanthin, a carotenoid, which, if consumed in large quantities, produces an orange-brown color in the skin.

Pathogenesis

Carotenoderma is the cutaneous manifestation of carotenemia, which is in turn caused by excess carotenoids in the blood. This usually occurs because of excess intake of carrots, but excess intake of other yellow vegetables (e.g., sweet potatoes) and yellow fruits (e.g., mangoes, cantaloupe, apricots) can also cause the condition. Carotene can also be acquired from foods that use it as a coloring agent. Patients with diabetes mellitus, anorexia nervosa, and hypothyroidism are prone to this disorder because of abnormal metabolism of carotenoids. Patients with renal dysfunction can develop this condition due to diminished excretion. A similar disorder is associated with excess intake of lycopene, another carotenoid, found in high amounts in tomatoes.

Clinical Features

- Carotenoderma may affect persons of any age, from infants to geriatric populations, but it is usually found in children and in vegetarians.
- Diffuse yellow (Fig. 27.23) or yellow-orange pigmentation (Fig. 27.24) of the skin occurs. The color change may be subtle and is best appreciated in comparison to normal skin (see Fig. 27.24). In patients with high lycopene intake, a deeper orange hue can be appreciated.
- The discoloration is most obvious in areas with higher concentrations of sweat glands and a thick stratum corneum, such as the palms and soles. The tip of the nose, forehead, chin, nasolabial fold, and behind the ears are also often affected.
- Discoloration may rarely affect the hard palate, but the sclera are spared.
- Patients lack the systemic symptoms and findings of liver disease and jaundice—notably fever, pruritus, nausea, vomiting, and stool color changes.

Diagnosis

- A dietary history is important to identify sources of excess carotenoid intake. Most patients can quickly identify the source once the condition is explained.
- Rare patients with eating disorders, such as those with anorexia nervosa, may evade questions about diet.
- The clinical presentation of yellow to yellow-orange skin, accentuated on the palms and soles, and with normal sclera, supports the diagnosis.
- The diagnosis can be confirmed with laboratory testing, including liver function testing and determination of beta-carotene levels.
- Skin biopsies are of no value.

Treatment

- Carotenoderma is a benign condition that does not require treatment.
- For patients with cosmetic concerns, excess carotenoid intake must be reduced.
- High beta-carotene levels will not result in hypervitaminosis A because the body acts to reduce the conversion of beta-carotene to vitamin A.

Clinical Course

If excess carotenoid intake is moderated effectively, the skin will return to normal color in 1 to 3 months.

Fig. 27.23. Patient with carotenoderma due to a vegetarian diet that included large numbers of carrots and squash. Note the accentuation of the yellow color on the palms and normal sclera, both characteristic features of this condition. This patient was admitted from the emergency room to the hospital for so-called jaundice. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

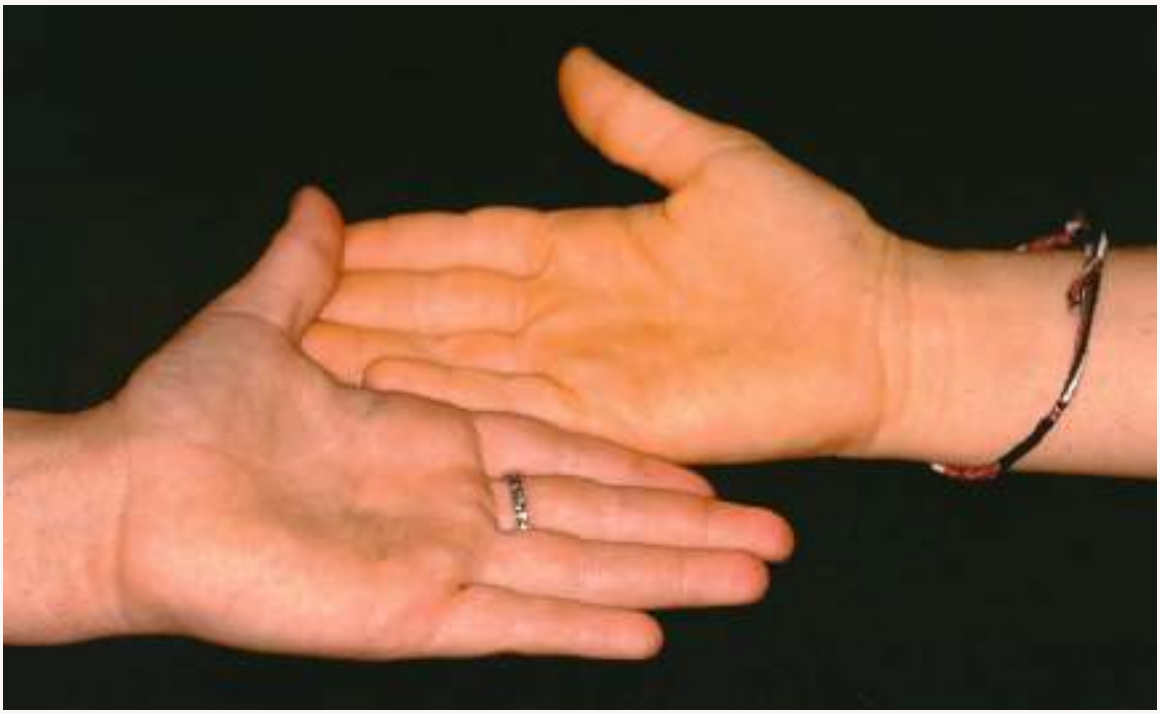

Fig. 27.24. Iatrogenic carotenoderma with a yellow-orange color in a patient with erythropoietic protoporphyria being treated with beta-carotene. Note the comparison to a normal palm.

Drug-Induced Blue-Gray Discoloration ICD10 code L81.9

Causes of Drug-Induced Blue-Gray Skin Discoloration

- Amiodarone
- Amodiaquine
- Argyria (silver)
- Chloroquine
- Chlorpromazine
- Chrysiasis (gold)
- Clofazimine
- Hydroxychloroquine
- Iron
- Minocycline

Pathogenesis

Numerous ingested drugs may produce a blue-gray discoloration of the skin (see box above). Some drugs produce this coloration via direct deposition in the skin (e.g., silver in argyria), some form complexes with other compounds (e.g., melanin-chloroquine complexes), and others stimulate endogenous pigmentation (e.g., lipofuscin in clofazimine-induced pigmentation). Some drugs, such as minocycline, appear to induce dyspigmentation by more than one mechanism. Common implicated drugs include antimalarial drugs and minocycline. The incidence of argyria has increased due to self-directed use of silver in many naturopathic remedies.

Clinical Features

- In most cases, patients have taken the offending medications for months, years, or even decades.
- The discoloration is variable, from slate-gray to blue-gray to dark blue, depending upon the drug and amount consumed (or deposited).
- Localization of the deposits depends upon the drug involved. Some drugs preferentially deposit in certain anatomic sites. Classic deposition patterns for some of the medications are as follows:
  - Deposition in scars—minocycline (Fig. 27.25)
  - Deposition in stasis dermatitis—minocycline (Fig. 27.26)
  - Deposition on photoexposed skin—amiodarone (Fig. 27.27), chlorpromazine, gold (Fig. 27.28)
  - Deposition in skin overlying bone—antimalarials
  - Deposition over the hard palate—antimalarials
  - Deposition in skin over the buttocks—iron (from an intramuscular injection)
  - Deposition in the lunula of the nails—silver
  - Deposition in the cartilage of the ear—minocycline

Diagnosis

- The diagnosis is contingent upon recognizing the abnormal blue-gray or slate-gray color is present.
- Prescriptions, past and present, must be carefully reviewed.
- Naturopathic medications must be scrutinized, as iron and silver can be present in these agents.
- If a cause cannot be established, a 3- or 4-mm punch biopsy from the darkest area should be performed. In some cases, the histologic findings are diagnostic, whereas in others it may simply be supportive.
- In rare cases, a specialized facility may need to perform electron microscopy or other advanced analytic techniques, but these technologies are expensive and difficult to employ.

Treatment

- Discontinuation of the offending medication is essential.
- In cases that are photoaccentuated, a broad-spectrum sunscreen, blocking UVA and UVB, may be useful.

Clinical Course

Even with discontinuance of the offending medication, it may take months or years for improvement or resolution of the dyspigmentation. Pigmentation caused by argyria (silver deposition) is often permanent.

Fig. 27.25. Patient with minocycline-induced blue-gray discoloration in acne scars. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 27.26. Patient with minocycline-induced dyspigmentation in stasis dermatitis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

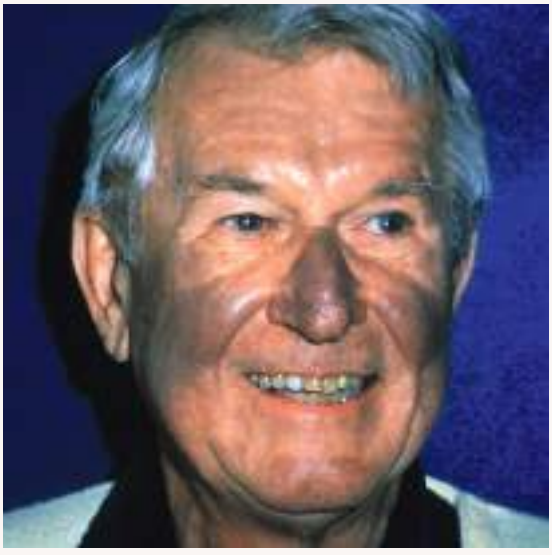

Fig. 27.27. Patient with photoaccentuated blue-gray discoloration from amiodarone. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 27.28. Patient with subtle, photoaccentuated, slate-gray discoloration secondary to gold. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 28
Papillomatous and Verrucous Lesions

Key Terms

Verrucae Vulgaris
- Myrmecia
- Verrucae palmaris
- Verrucae plantaris
- Warts

Verrucae Plana
- Epidermodysplasia verruciformis
- Flat warts

Condyloma Acuminatum
- Anogenital warts
- Venereal warts

Seborrheic Keratosis
- Dermatosis papulosa nigra
- Inflamed seborrheic keratoses
- Melanoacanthoma
- Sign of Leser-Trélat
- Stucco keratosis

Acrochordon
- Fibroepithelial polyps
- Skin tags
- Soft fibromas

North American Blastomycosis
- Gilchrist disease

Verrucous Carcinoma
- Ackerman tumor
- Buschke-Löwenstein tumor
- Epithelioma cuniculatum

Papillomatous and verrucous lesions of the skin include viral infections (e.g., warts, molluscum), deep fungal infections (e.g., blastomycosis), and benign and malignant neoplasms. Papillomas are pedunculated or sessile, chiefly epidermal growths, often with a cauliflower-like appearance. Similarly, the term *verrucous,* as the name implies, suggests an exophytic lesion, like a wart, often with spirelike, outward projections of the epidermis. The linear presentation of papillomatous lesions has been addressed in Chapter 17.

Differential Diagnosis of Verrucous and Papillomatous Lesions

Common
- Acrochordons
- Condyloma acuminatum
- Dermatosis papulosa nigra
- Papillomatous intradermal nevi
- Seborrheic keratosis
- Stucco keratosis
- Verrucae plana
- Verrucae vulgaris

Uncommon
- Deep fungal infections
- Epidermal nevus
- Inflamed linear verrucous epidermal nevus
- Verrucous carcinoma
- Verrucous incontinentia pigmenti

IMPORTANT HISTORY QUESTIONS

When did this lesion(s) develop?

The temporal course is important. Some lesions develop acutely (e.g., condylomata acuminata), whereas others are insidious, but can last for decades (e.g., acrochordons, seborrheic keratoses, verrucous carcinoma). Still yet, other conditions may be congenital in nature (e.g., epidermal nevus).

Has the lesion changed?

Many malignant tumors, such verrucous carcinoma, demonstrate relentless and progressive growth, whereas a benign lesion is more likely to remain stable.

Where have you visited or lived in the past few years?

Some infections, like verrucous cutaneous blastomycosis (see Fig. 28.20), are more common in certain geographic areas. Infections may also be acquired from travel to endemic areas.

IMPORTANT PHYSICAL FINDINGS

How many verrucous or papillomatous lesions are present?

Some verrucous and/or papillomatous processes are typically multiple (e.g., acrochordons, condylomata, dermatosis papulosa nigra, seborrheic/stucco keratosis), whereas others are most often solitary (e.g., epidermal nevus, verrucous carcinoma).

What is the distribution of the lesions?

Many verrucous and/or papillomatous processes have characteristic distributions. Acrochordons are often found on flexural surfaces, such as the neck, axilla, and inguinal folds. Condylomata acuminata (genital warts) are usually found in or near the genitalia. Dermatosis papulosa nigricans is found around the eyes and cheeks of persons of color. Verrucous carcinoma is usually found in the oral cavity (Ackerman tumor), anogenital area, or on the feet (epithelioma cuniculatum).

What is the arrangement of the lesions?

Some papillomas may be linear (e.g., epidermal nevus, verruca plana), whereas others are widely distributed.

What is the size of the lesions?

Some papillomas are usually small (e.g., acrochordons, stucco keratosis, verrucae plana), whereas others vary in size (e.g., seborrheic keratoses). Some may be usually large (e.g., epidermal nevus, verrucous carcinoma).

Verrucae Vulgaris ICD10 code B07.8

Pathogenesis

Verrucae (warts) are cutaneous and/or mucocutaneous infections of keratinocytes caused by human papillomavirus (HPV). There are more than 100 subtypes of HPV, with some subtypes affecting characteristic skin locations. In most cases, the infection follows direct inoculation of the skin by HPV, presumably through minor (imperceptible) skin breaks. In the United States, the lifetime risk of developing a clinically-relevant HPV infection has been estimated to be about 80%.

Clinical Features

- Verrucae can occur in any age group but are most common in young children.
- Verrucae can affect any cutaneous site and, occasionally, mucosal surfaces.
- Lesions present as skin-colored verrucous papules or plaques (Figs. 28.1 and 28.2), often with overlying scale, which can disrupt normal skin lines (dermatoglyphs). There may be black dots that represent thrombosed capillaries, and this phenomenon can be called "seed warts" by patients.
- Verrucae often occur on the hands (verrucae palmaris) or feet (verrucae plantaris; Fig. 28.3).
- Myrmecia (Greek for "ant") represent endophytic verrucae caused by HPV1 that occur upon the feet (common) or hands (less common). Myrmecia may be painful.
- Destructive modalities may spread a wart in peripheral fashion, causing a so-called "fairy ring" of lesions (Fig. 28.4). Still, these treatment modalities are widely used, and the risk is often tolerated.

Diagnosis

- The diagnosis is often based chiefly upon the clinical appearance of the lesion.
- It can be difficult to distinguish plantar warts from corns and callosities because both cause overlying scale. Lesions may be removed from this overlying keratin with a scalpel blade to examine the base. Plantar warts demonstrate a loss of normal skin lines (dermatoglyphs), whereas corns and callosities retain such markings.
- Problematic cases can be sampled by a deep shave and submitted for histologic examination.

Treatment

- Over-the-counter treatments are usually based on topical salicylic acid, with or without other additives, such as lactic acid. The response rate is from 40% to 84% (average, 61%). Other topical therapies used include cantharidin (so-called "blister beetle juice"), imiquimod, tretinoin, and 5-fluorouracil.
- Liquid nitrogen (LN_2) cryotherapy is a destructive therapy often used by health care providers. In published studies, the cure rate of LN_2 is between 26% and 96%. Optimal results are achieved with treatment every 2 to 3 weeks. Plantar warts respond better if excess keratin is pared before LN2 treatment and if two freeze-thaw cycles are employed.
- Occlusion with duct tape was widely reported in the lay press a number of years ago. Medical evidence suggests the efficacy of duct tape is highly variable.
- Immunotherapy includes topical sensitization with diphencyprone or squaric acid dibutylester or the intralesional injection of *Candida* antigen.
- Systemic therapies for recalcitrant warts include oral cimetidine and oral retinoids. The efficacy of these modalities, particularly cimetidine, is dubious.
- Laser therapy is usually performed with a carbon dioxide laser or flashlamp pulsed dye laser. The first is an ablative laser, whereas the latter targets the increased blood supply that is present in verruca.
- Intralesional therapies include bleomycin, interferon, and formic acid, but these modalities are usually reserved for the most recalcitrant verruca.

Clinical Course

About 40% to 70% of verrucae resolve spontaneously, usually in about 2 years.

Fig. 28.1. Multiple periocular verrucae in a child, always a therapeutic challenge. (From the William Weston Collection, Aurora, CO.)

Fig. 28.2. Patient with multiple periungual warts. The periungual and subungual regions are particularly challenging to treat. (From the William Weston Collection, Aurora, CO.)

Fig. 28.3. Patient with plantar wart. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 28.4. Patient with the frustrating fairy ring wart that occurred after cryotherapy. The wart has recurred in the margins of the blister, plus the patient now also has a scar from the therapy.

Verrucae Plana ICD10 code B07.8

Pathogenesis

Verrucae plana, also known as flat warts, are usually caused by HPV3. Because of differences in the clinical presentation and management, it is useful to discuss separately verrucae plana.

Clinical Features

- Verrucae plana are more common in children and young adults but can affect any age group.
- Verrucae plana usually occur on the face and dorsal hands but can also affect the trunk and lower extremities.
- Lesions are typically numerous and may number in the hundreds.
- The primary lesion is a skin-colored to tan to light brown small papilloma that rarely exceeds 3 mm in diameter (Figs. 28.5 and 28.6).
- Lesions may become inflamed, with a red or violaceous color (Fig. 28.7).
- Lesions may appear in a linear configuration due to autoinoculation (see Fig. 28.7).
- Variations include a so-called "intermediate wart," which has features of both a flat and common wart.
- Epidermodysplasia verruciformis (EV) is a genetic predisposition to extensive flat warts caused by HPV5, HPV8, HPV14, or HPV17. Lesions of EV may mimic other neoplasms or inflammatory conditions (Fig. 28.8). Lesions of EV have some oncogenic potential, and squamous cell carcinoma can arise in some cases.

Diagnosis

- In most cases, the occurrence of multiple, small, uniform skin-colored to brownish papillomas is diagnostic. In some cases, it may be difficult to distinguish verrucae plana from other papillomatous conditions, such as seborrheic keratosis.
- Problematic cases, including lesions in adults, truncal lesions, and inflamed lesions, should be biopsied to clarify the diagnosis. The findings are often specific (koilocytosis).

Treatment

- Verrucae plana can be difficult to treat, and if the lesions are few in number and are not bothersome, therapy is not required. Treating numerous lesions may be challenging.
- If treatment is desired, nonscarring modalities, such as topical tretinoin gel (0.025%–0.1% applied qd), is a reasonable option.
- Topical imiquimod cream (applied three times/week for up to 16 weeks) is also a reasonable choice.
- Recalcitrant cases may be treated with ablative lasers.
- Destructive modalities (e.g., LN_2, electrodessication) may be utilized but can cause scarring, and for this reason, such modalities are often avoided on the face.

Clinical Course

Most verrucae plana will resolve without treatment, usually over 2 to 3 years. EV often persists longer and also has the potential to eventuate into squamous cell carcinoma, on occasion.

Fig. 28.5. Patient with numerous small tan papillomas in a perioral distribution of focal coalescence into a small plaque. (From the William Weston Collection, Aurora, CO.)

Fig. 28.6. Patient with numerous small tan, flat warts that are clinically difficult to distinguish from small seborrheic keratoses.

Fig. 28.7. Patient with verrucae plana with autoinoculation at a site of a superficial injury. These lesions are violaceous in color due to inflammation.

Fig. 28.8. Numerous inflamed red flat papillomas on the trunk in a patient with epidermodysplasia verruciformis.

Condyloma Acuminatum ICD10 code A63.0

Condylomata Acuminata and the Toilet Seat
Although it is difficult to disprove transmission of HPV via fomites, such as a toilet seat, there are no documented cases in which this has happened.

Pathogenesis

Condylomata acuminata (singular, condyloma acuminatum), also called anogenital warts or venereal warts, represent the most common sexually transmitted infection in the United States. Lesions may be acquired in utero, via ascension up the birth canal, or by the neonate, as it passes through the birth canal. HPV6 and HPV11 cause 90% of genital warts, and these strains have low oncogenic potential. Some HPV subtypes—16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 68, 73, and 82—have a high oncogenic potential and are associated with cervical, vulvar, and penile carcinoma. Each year, in the United States, there are about 5 million new cases of genital warts.

Clinical Features

- Genital warts are most common in sexually active young men and women, especially those persons with multiple partners.
- In women, lesions occur most often on the labia majora, labia minora, and perianal area. Less often lesions occur on the skin of the clitoris, inguinal region, abdomen, and thighs.
- In men, lesions are usually found on the penis (glans, shaft, and urinary meatus) and perianal area, with lesions less often on the skin of the inguinal region, abdomen, or thighs.
- Genital warts range from skin-colored to tan to brown to black vegetations that may appear moist and usually have less scale than common warts (Figs. 28.9–28.12).
- The size of genital warts is also variable, with some lesions as small as 1 mm and other lesions 5 cm or more in size, resembling cauliflower. Large lesions are more common in immunocompromised patients.

Diagnosis

- The clinical presentation of genital warts is diagnostic in most cases.
- Some cases may require a shave biopsy and perhaps HPV subtyping to determine if an oncogenic strain is present.

Treatment

- The CDC maintains an updated website with recommendations regarding treatment and counseling (http://www.cdc.gov/std/treatment).
- At present, no single therapy is uniformly superior. Selection of a treatment modality is impacted by the clinical situation, patient expectations, and clinician's personal experience and practice style.
- Topical medications that can be applied at home include imiquimod 5% cream, podofilox 0.5% solution or gel, and sinecatechins 15% ointment.
- Destructive and surgical interventions include liquid nitrogen cryotherapy, shave or snip removal with surgical scissors, electrofulguration, and laser destruction.
- In children, anogenital warts may cause concern for potential sexual abuse (see Fig. 28.12). However, a Canadian study of 72 children suggested that even the presence of sexually-related subtypes of HPV is not predictive of sexual abuse. A careful history and appropriate investigation remain the optimal ways to include or exclude sexual abuse.

Clinical Course

In one study, a spontaneous clearance rate of about 70% was observed over a 12-month period.

Fig. 28.9. Patient with gigantic, cauliflower-like, condyloma acuminatum, with variegation in color.

Fig. 28.10. Patient with numerous small perianal condylomata. Many but not all perianal infections are due to receptive anal intercourse. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 28.11. Patient with genital warts affecting the urethral meatus, a common site in men.

Fig. 28.12. Large cauliflower-like genital warts in an infant, a presentation that may or may not be sexually acquired. (From the William Weston Collection, Aurora, CO.)

Seborrheic Keratosis ICD10 code L82.1

Pathogenesis

A seborrheic keratosis (SK) is a benign epithelial tumor composed of keratinocytes. The pathogenesis of SKs is poorly understood, but in one study, *FGFR3* mutations were identified in more than half of all lesions examined. SKs are common in some ethnic groups, and the prevalence of SKs exceeds 90% by 65 years of age.

Warning! Be Careful!
Whereas most often SKs may be confidently diagnosed on simple visual inspection, all dermatologists have biopsied a presumed SK that was actually a melanoma, when analyzed under the microscope. Therefore, even in a patient with numerous SKs, if there is a so-called "ugly duckling," or a lesion that appears and/or behaves differently from the others, it should be biopsied and sent for histologic examination.

Clinical Features

- SKs can present in adolescence, but most occur after the age of 50.
- SKs are common on the face, back, and chest but can occur anywhere, except the palms and soles.
- SKs present as a stuck-on waxy or scaly papule, with color that ranges from near-white to yellow (Fig. 28.13) to tan to brown (Fig. 28.14) to black (Fig. 28.15).
- SKs near skin folds, such as the periocular area, neck, axilla and groin, are more likely to be papillomatous, with a narrow stalk (Fig. 28.14). This variant can be difficult to differentiate from an acrochordon.
- Dermatosis papulosa nigra (DPN) is a variant with multiple small dark black SKs around the eyes and cheeks of persons with darker skin (Fig. 28.16).
- Melanoacanthoma is an SK with a particularly dark black color due to abundant melanin in the lesion. This variant can be clinically difficult to differentiate from a nodular melanoma (see Fig. 28.15).
- Stucco keratosis is a variant with multiple small near-white hyperkeratotic SKs that presents on the distal aspects of the extremities.
- The sign of Leser-Trélat is the explosive onset of innumerable SKs in association with an underlying malignancy, especially gastrointestinal cancer, and with some lymphomas.
- Inflamed seborrheic keratoses (see Chapter 29), as the name implies, are often pruritic and demonstrate varying degrees of erythema and scale, with an underlying inflammatory response.

Diagnosis

- In most cases, the diagnosis is based upon the clinical appearance.
- Suspicious lesions should sampled by shave biopsy, with the tissue submitted for histologic analysis.

Treatment

- In most cases, reassurance (without treatment) is appropriate, because SKs are benign.
- When there is strong confidence in the diagnosis, SKs can be destroyed with LN_2 cryotherapy or curettage.
- Shave removal, or snip removal for pedunculated lesions, will allow for histologic analysis to confirm the diagnosis.
- Chemical peels can be used for those with multiple small lesions, such as dermatosis papulosa nigra.

Clinical Course

SKs may occasionally disappear due to inflammation or trauma, but in most cases, SKs enlarge slowly, and new lesions continue to appear with age.

Fig. 28.13. Close-up of typical small, stuck-on seborrheic keratosis.

Fig. 28.14. Close-up of multiple seborrheic keratoses, with some being very exophytic.

Fig. 28.15. Close-up of a darkly pigmented stuck-on seborrheic keratosis (melanoacanthoma), which could be confused with a melanoma. (From the Joanna Burch Collection, Aurora, CO.)

Fig. 28.16. Patient with dermatosis papulose nigricans, a clinical variant of seborrheic keratosis.

Acrochordon (Soft Fibroma) ICD10 code L91.8

Pathogenesis

Acrochordons, also known as skin tags, are benign exophytic neoplasms that consist of an unremarkable epidermis, with a normal collagenous core of papillary dermis. Larger lesions, with abundant dermis, or even fat, are often called soft fibromas or fibroepithelial polyps. The pathogenesis of acrochordons is poorly understood. Associations with obesity, diabetes, pregnancy, and acromegaly support a hormonal influence. A genetic influence is also likely because acrochordons have been seen with increased frequency in Birt-Hogg-Dubé and Beare-Stevenson syndromes, and may even be present from birth.

Clinical Features

- Most acrochordons are found in middle-aged or geriatric populations, but acrochordons can occur at any age.
- Acrochordons vary from a single lesion to hundreds of lesions.
- Common locations include the neck, axillae, groin, and eyelids. Other sites of lesser involvement include the trunk and proximal extremities.
- The primary lesion is soft, fleshy, baglike exophytic lesion with a narrow stalk. Most lesions are between 1 and 10 mm in size. The color varies from skin-colored to light brown (Figs. 28.17 and 28.18).
- Larger lesions (soft fibromas) are usually solitary and may be larger than 3 cm (Fig. 28.19).
- Occasional acrochordons are traumatized or strangulated, leading to hemorrhage or necrosis.

Diagnosis

- The diagnosis is usually made based upon the clinical appearance and the involvement of characteristic anatomic locations. The presence of multiple acrochordons, all with similar features, is reassuring.
- The clinical appearance of acrochordons may be mimicked by papillomatous or pedunculated nevi or neurofibromas, other benign fibromas, and papillomatous or pedunculated SKs.
- A snip or shave biopsy is often curative and diagnostic.

Treatment

- No treatment is necessary because acrochordons are benign lesions.
- Acrochordons that are inflamed or repeatedly traumatized may be removed by snipping the base of the stalk with sharp surgical scissors (see Fig. 28.18). Local anesthesia is not always required for smaller lesions, but it is often required for larger lesions.
- Other treatment options include cryotherapy (to the stalk) and electrodessication.

Prognosis

Acrochordons are benign lesions without any malignant potential.

Fig. 28.17. Numerous acrochordons in an obese man, with subtle findings of acanthosis nigricans. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 28.18. Close-up of numerous soft, baglike acrochordons. Note the red scars at the bottom, where some of these had been previously taken off by snip removal. It is a real herculean task to remove all these skin tags.

Fig. 28.19. Close-up of large flattened soft fibroma on the buttock.

North American Blastomycosis ICD10 code B40.9

Pathogenesis

North American blastomycosis (Gilchrist disease) is a deep fungal infection produced by the soil saprophyte, *Blastomyces dermatitidis*. This dimorphic fungus exists as yeast in the body, but it has a mycelial phase in soil. Infections are acquired via an aerorespiratory route and are most common in the Ohio-Mississippi-Lawrence river basins (Fig. 28.20). The fungus can also be seen in parts of Africa, the Middle East, and Central and South America.

Clinical Features

- Primary blastomycosis infections are divided into pulmonary and cutaneous disease:
  - Primary pulmonary blastomycosis (which can be associated with erythema nodosum)
  - Primary cutaneous inoculation blastomycosis (rare; confined to laboratory accidents and dog bites)
- Systemic blastomycosis, caused by hematogenous spread from the lungs, is divided into two forms:
  - Chronic localized blastomycosis (the most common with skin involvement)
  - Generalized blastomycosis
- Chronic localized blastomycosis can affect any organ system, but the tissues usually affected are as follows:
  - Skin (50%)—usually begins as a papule that becomes verrucous (Figs. 28.21 and 28.22). Chronic lesions may ulcerate or scar (see Fig. 28.22).
  - Bone (25%–50%)
  - Genitourinary system (5%–22%), especially the prostate

Diagnosis

- The clinical presentation of a chronic verrucous lesion, particularly occurring in an area of high endemicity, can be diagnostic.
- A potassium hydroxide (KOH) examination of skin or sputum (from pulmonary disease) is positive in 60% of skin lesions.
- A skin biopsy (punch or incisional specimen) is usually diagnostic if the organism can be identified (Fig. 28.23).
- A fungal culture of a skin biopsy is positive in about 80% of cases, but results may take 1 to 4 weeks.
- Serologic tests, including an immunodiffusion test (positive in 80% of cases) and complement fixation test (positive in 50% of cases), are commercially available, but a definitive diagnosis still requires demonstration of the organism by culture or biopsy.

Treatment

- Chronic localized disease is usually treated with itraconazole (200–400 PO mg qd) for 6 to 12 months. The cure rate is approximately 90%.
- Severe disease (e.g., meningeal disease, cases in immunocompromised or AIDS patients) is usually treated with intravenous amphotericin B, with an oral azole antifungal for maintenance.

Clinical Course

The overall mortality rate in immunocompetent patients is about 2% but approaches 30% in immunocompromised patients.

Fig. 28.20. Highly endemic areas of blastomycosis shaded in *yellow*. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 28.21. Acute onset of verrucous lesions of the forehead and around the eye in a case acquired in Colorado. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 28.22. Patient with chronic cutaneous blastomycosis of the perianal and buttock areas, with both verrucous lesions and scarring.

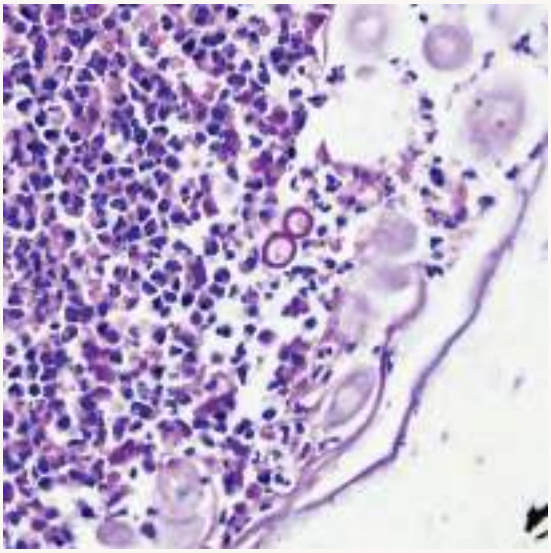

Fig. 28.23. Characteristic thick-walled yeast in an infection acquired in Colorado. The organisms are typically 8 to 15 μm in size and demonstrate broad-based budding when replicating (periodic acid–Schiff–diastase stain; 400×).

Verrucous Carcinoma ICD10 code C44 (plus three more digits, site-dependent)

Pathogenesis

Verrucous carcinoma is a variant of well-differentiated squamous cell carcinoma that most often occurs in the oral cavity (Ackerman tumor), on the genitalia (Buschke-Löwenstein tumor), and on acral skin, particularly the foot (epithelioma cuniculatum). Cases of verrucous carcinoma often arise in long-standing warts. Molecular studies have identified HPV in the tumor, with subtypes 1, 2, 11, 16, and 18 being most common. Other cases have arisen in areas of chronic trauma or inflammation, such as scars, chronic draining fistulas, dystrophic epidermolysis bullosa, and lupus vulgaris (cutaneous tuberculosis).

Clinical Features

- Verrucous carcinoma is more common in older patients, with the only exception being cases that arise in dystrophic epidermolysis bullosa.
- Lesions are typically slow-growing and are composed of hyperkeratotic papillomatous or verrucous plaques or tumors of variable size (Figs. 28.24–28.26).
- The tumor may contain crypts of keratin that can lead to draining abscesses and fistulas.

Diagnosis

- A high degree of suspicion is required for large verrucous and/or papillomatous lesions that manifest aggressive behavior, particularly in the oral cavity, on anogenital area, or on acral skin.
- The diagnosis is established via deep incisional biopsy. The examining pathologist should be told of the clinical concern for verrucous carcinoma. A superficial sample (shave) or small sample (punch) is usually not diagnostic because the examiner needs to be able to evaluate the growth pattern. HPV subtyping may be helpful.
- Verrucous carcinoma can be a difficult histologic diagnosis to make. If a first sampling results in a benign diagnosis, such as pseudoepitheliomatous hyperplasia, but if clinical concern for verrucous carcinoma persists at the site, a larger second biopsy should be performed, and/or the case should be discussed with the pathologist or dermatopathologist.

Treatment

- Complete surgical extirpation is the treatment of choice for verrucous carcinoma. Because of the typical large size, the surgery may be difficult. Local recurrence rates are high, perhaps over 50% in some studies. Micrographic surgery (Mohs surgery) should be considered, if this technique is available.
- LN_2 cryosurgery might be considered for lesions that cannot be resected, but this destructive modality does not allow for margin control, and it must be performed by someone with expertise in this area.
- Radiation therapy can also be performed in cases that are inoperable, but, on occasion, this treatment can transform the tumor into a higher grade form of squamous cell carcinoma.

Clinical Course

The clinical course is that of a locally aggressive malignancy, with considerable morbidity and lesser mortality. Published recurrence rates in the literature vary, but in some studies the local recurrence rate has exceeded 50% (Fig. 28.27). The tumor only rarely becomes metastatic, but, in some studies, about 20% to 30% of patients eventually died from complications of the malignancy.

Fig. 28.24. Patient with large eroded verrucous carcinoma of the plantar surface of the foot that demonstrates verrucous hyperplasia punctuated by keratinous crypts.

Fig. 28.25. Patient with early verrucous carcinoma of the penis, with an overlying cutaneous horn.

Fig. 28.26. Patient with an advanced verrucous carcinoma that has almost totally replaced the penis.

Fig. 28.27. Cross-sectional magnetic resonance imaging (MRI) scan of the forefoot demonstrating a recurrent verrucous carcinoma *(white areas).* These were initially treated with Mohs surgery but recurred and penetrated through the foot to the dorsum.

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Chapter 29
Tumors With Scale

Key Terms

Squamous Cell Carcinoma in Situ
- Bowen disease
- Erythroplasia of Queyrat

Keratoacanthoma
- Keratoacanthoma centrifugum marginatum

Benign Lichenoid Keratosis
- Lichen planus–like keratosis

Tumors with scale are common and represent a heterogeneous group of epithelial neoplasms. This group of important skin tumors includes benign conditions, in situ malignancies (those confined to the epidermis), and frankly invasive cancers. Although the conditions covered in this chapter usually have scale present on the surface, exceptions exist. There may be lesser scale in early or evolving lesions, or, if the tumor is ulcerated, scale may be absent.

Differential Diagnosis of Tumors With Scale

Common
- Benign lichenoid keratoses
- Inflamed seborrheic keratosis
- Keratoacanthoma
- Squamous cell carcinoma
- Squamous cell carcinoma in situ

Uncommon
- Acantholytic acanthoma
- Epidermolytic acanthoma
- Warty dyskeratoma

IMPORTANT HISTORY QUESTIONS

How long has this lesion been present?

The temporal course may suggest a benign or malignant process. A lesion present for years, or even decades, is less likely to be malignant than a lesion that arises quickly, over weeks or months.

Has the lesion recently changed?

Benign lesions can become inflamed (e.g., an inflamed seborrheic keratosis, a lichenoid keratosis arising in a solar lentigo), but a history of evolution sometimes suggests a malignant process.

Is this lesion growing rapidly?

Some malignant processes arise quickly (e.g., keratoacanthoma type of squamous cell carcinoma, aggressive forms of squamous cell carcinoma). Any rapid growth should be noted.

Has the lesion bled?

Any skin lesion, benign or malignant, can bleed when traumatized, particularly if the lesion is exophytic. However, an affirmative response to this question could suggest malignant qualities. A conservative approach is to consider biopsy of any lesion that has bled.

Have you had a previous skin cancer?

Persons with sufficient sun exposure to develop a nonmelanoma skin cancer of any type are at increased risk for a second such neoplasm. Once a person has one nonmelanoma skin cancer, he or she has a 50% chance of having another in the next 3 to 5 years. Skin cancer risk is also affected by chronic immunosuppression, exposure to radiation or arsenic, or infection with oncogenic forms of human papilloma-virus (HPV).

IMPORTAN PHYSICAL FINDINGS

What is the location of the lesion or lesions?

Certain scaling tumors may be associated with characteristic locations. For example, seborrheic keratoses occur often on the face, chest, and proximal extremities. Squamous cell carcinoma in situ and squamous cell carcinoma occur on sun-damaged skin or the genitalia.

What type of skin does the patient have?

Assessment of patient skin type (Fitzpatrick I–VI) may assist in predicting the risk of kertainocyte derived skin cancer. Persons with fair skin and light eyes are more likely to develop cutaneous malignancies. In particular, persons with red hair and blue eyes are among those at highest risk.

What does the lesion feel like on palpation?

Palpation to identify dermal extension, although imperfect, is useful in differentiating a benign or in situ malignant process from a deeply invasive form of skin cancer.

Squamous Cell Carcinoma in Situ

ICD10 code D04 (one or 2 digits, site dependent)

Pathogenesis

Squamous cell carcinoma in situ (SCCIS), also known as *Bowen disease,* is intraepidermal form of squamous cell carcinoma. SCCIS can occur on the skin (Fig. 29.1) and mucous membranes. Multiple causative factors are associated with SCCIS, including ultraviolet light, arsenic ingestion, and infection with oncogenic strains of HPV. SCCIS is more common in immunocompromised persons.

Clinical Features

- Most SCCIS arises on sun-exposed skin or genitalia of middle-aged to elderly persons.
- Patients typically report a persistent lesion, with progressive horizontal expansion. Sometimes, there may be a history of bleeding.
- The primary lesion consists of a sharply defined scaly papule or plaque, with variable erosion or ulceration (Figs. 29.2–29.4). There may be inflammation and erythema due to the host response.
- Some SCCIS may be papillomatous, resembling a wart (Fig. 29.5). Other forms are hyperkeratotic. On occasion, there may even be an overlying cutaneous horn of hyperkeratosis.
- *Erythroplasia of Queyrat* is a term used for HPV-induced squamous cell carcinoma of the genitalia.

Diagnosis

- The history and observation of an expanding scaly and/or eroded papule or plaque on sun-damaged skin is important to the diagnosis. Similarly, an expansive lesion located in the anogenital area is concerning for SCCIS.
- The diagnosis must be established by biopsy. A deep shave, large punch (depending on the size of the lesion), or incisional or excisional biopsy may be employed depending on the clinical situation. The latter technique has the potential advantage of providing uninvolved margins, if expressly commented on by the pathologist, thereby providing definitive management.

Treatment

- Excision provides for assessment of the surgical margins and exclusion of dermal invasion.
- A deep shave biopsy, followed by curettage and electrodessication, is another treatment option. Although this treatment does not require suturing, it precludes margin assessment. Appropriate serial surveillance is necessary to ensure local eradication.
- Cryosurgery is less often used, but it does have an adequate cure rate in experienced hands.
- Topical 5-fluorouracil may be used, and various products and strengths are available (2% and 5% solutions and 0.5%, 1%, and 5% creams). Typical use is qd or bid for at least 6 to 8 weeks.
- Topical imiquimod applied two to three times per week for 16 weeks is an option for some patients.

Clinical Course

SCCIS can grow slowly and insidiously for many years, before later becoming invasive. The risk of progression for SCCIS to frankly invasive squamous cell carcinoma (SCC) is from 5% to 15% per year.

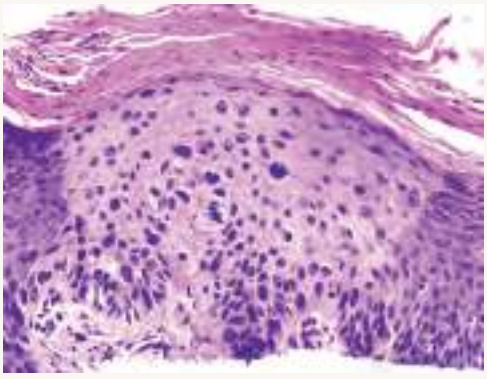

Fig. 29.1. Patient with small squamous cell carcinoma in situ demonstrating full-thickness atypia of the keratinocytes.

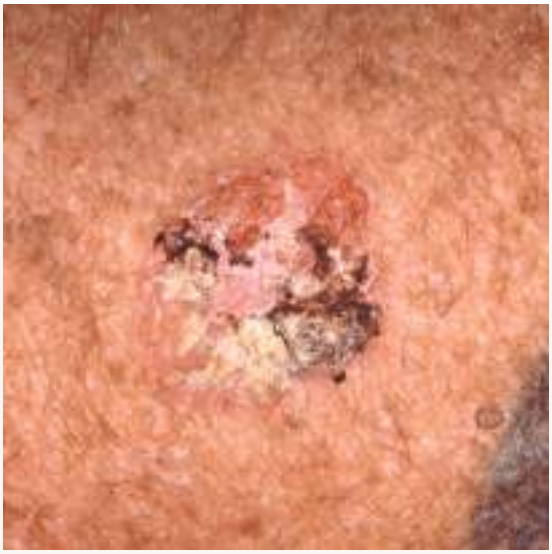

Fig. 29.2. Patient with squamous cell carcinoma in situ presenting as a scaly nodule with variable colors, including white, red, and dark purple. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 29.3. Patient with large squamous cell carcinoma in situ presenting as a large scaly plaque between the toes, with marked scale. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 29.4. Patient with human papillomavirus–induced squamous cell carcinoma in situ of the penis. This variant was formerly termed *erythroplasia of Queyrat.* (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 29.5. Large papillomatous squamous cell carcinoma in situ of the anus that was human papillomavirus–induced in a man who was HIV-positive.

Pathogenesis

SCC is the second most common skin cancer, second to basal cell carcinoma, with an estimated 200,000 to 700,000 new cases per year. Most SCC is caused by exposure to ultraviolet light (outdoors or in tanning beds), radiation therapy, arsenic ingestion, or some petroleum products. SCC can also occur at sites of chronic injury, including burn scars, chronic skin infections, chronic ulcers, and chronic inflammatory conditions (e.g., lichen sclerosus). Importantly, SCC occurs more often in immunocompromised patients and may behave in an aggressive fashion in this population. Invasive SCC may arise in precursor lesions, such as actinic keratoses (see Fig. 29.5), SCCIS (Bowen disease), or within leukoplakia on mucosal surfaces.

Clinical Features

- SCC usually occurs on chronically sun-exposed skin of middle-aged or elderly persons.
- SCC often presents as a persistent lesion with progressive enlargement, possibly with bleeding.
- The clinical presentation is variable, but most often SCC consists of a scaly papule (Fig. 29.6), nodule, or plaque (Fig. 29.7) with variable erosion (Fig. 29.8), hemorrhage, or ulceration (Fig. 29.9). An inflammatory host response, such as surrounding erythema, is often observed.
- Verrucous carcinoma is caused by HPV, and it often has a papillomatous appearance. Ulcerated SCC may resemble the classic, so-called rat bite ulcer of basal cell carcinoma.
- Some invasive SCC may arise in contiguity with an actinic keratosis (see Fig. 29.6) or with SCCIS.

Diagnosis

- The clinical presentation of a rapidly growing papule or nodule, occurring on chronically sun-exposed skin, and in a patient with moderate to severe solar damage, is important.
- Immunosuppressed patients are more likely to have SCC. In this population, SCC may behave in an aggressive fashion. The threshold for performing a biopsy should be low in these persons.
- The diagnosis of SCC must be established by biopsy. Options include a deep shave biopsy, large punch (depending on the size of the lesion), and an incisional or excisional biopsy. An excisional biopsy allows for evaluation of margin status and may be curative (assuming the margins are uninvolved).

Treatment

- SCC is a malignant process, and it must be completely removed from the body. Surgical excision is usually used. Micrographically controlled (Mohs) surgery may be used for higher risk lesions or for tissue conservation.
- A deep shave biopsy, followed by curettage and electrodessication, is another treatment option. Although this treatment does not require suturing, it precludes margin assessment, and appropriate serial surveillance is necessary to ensure local eradication.
- Cryosurgery is less often employed, but it does have a satisfactory cure rate in experienced hands.
- Radiation therapy may be utilized, particularly in those who are not surgical candidates, or in elderly persons, sometimes for a variety of reasons.

Clinical Course

Aggressive SCC may occur at specific sites (e.g., lip, ear) and may be of lesser differentiation (moderate or poorly differentiated), deeply invasive (>3–4 mm), or of larger size. A fatal outcome is more likely in SCC with a diameter greater than 4 cm, perineural invasion, origin on a mucocutaneous junction, or deep extension into the subcutaneous tissue or beyond. It is estimated that cutaneous SCC, in general, has approximately a 4% rate of nodal metastasis and 1.5% rate of disease-specific death.

Fig. 29.6. Patient with early squamous cell carcinoma, with superficial invasion arising in an actinic keratosis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 29.7. Patient with neglected large squamous cell carcinoma, with marked scale. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 29.8. Eroded squamous cell carcinoma (SCC) of the mucocutaneous margin of a 25-year-old man that was metastatic to a regional lymph node. SCCs of mucocutaneous junctions are very aggressive. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 29.9. Ulcerated nodule on the ear of an elderly patient that was a poorly differentiated squamous cell carcinoma. The clinical differential diagnosis includes many different cutaneous malignancies. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Keratoacanthoma ICD10 code C44 (two or three digits, site dependent)

Pathogenesis

Keratoacanthoma (KA) is a low-grade form of SCC that arises from the follicular infundibulum. It is more common on heavily sun-damaged skin, and it has been estimated that there are about 200,000 new cases per year in the United States. Some KAs arise at sites of trauma, even repeatedly after surgery. Historically, KA was not considered a malignancy because many of the lesions spontaneously involuted, but it is now the modern trend to consider KA to be a form of squamous cell carcinoma.

Clinical Features

- KA usually presents as a rapidly evolving lesion on sun-exposed skin or at sites of trauma.
- The condition is largely limited to the sun-exposed skin of middle-aged or elderly persons.
- KA usually presents as a dome-shaped, crateriform papule, with a central hyperkeratotic plug that widens as the lesion matures (Figs. 29.10–29.12).
- Size of KA varies from smaller than 0.5 cm to 5 cm or larger (see Fig. 29.12).
- Keratoacanthoma centrifugum marginatum is a rare variant with relentless lateral expansion that can produce roughly annular lesions that exceed 30 cm in size.
- Rare patients may have multiple KAs. Multiple KAs often occur at sites of trauma and may recur at sites of surgery (Fig. 29.13).
- KAs are more common in persons with Muir-Torre syndrome and xeroderma pigmentosum.

Diagnosis

- The history of a rapidly growing papule or nodule on the sun-exposed skin of a middle-aged to elderly person with solar damage strongly suggests KA.
- Observation of a crateriform papule or nodule with central hyperkeratotic debris augments this concern.
- The diagnosis of KA must be established by biopsy. Options include a deep shave biopsy or incisional or excisional biopsy. An excision allows for evaluation of margin status and potentially may be curative.
- In many cases, the pathologist or dermatopathologist may render the diagnosis of a well-differentiated SCC, without mention of KA-like features, particularly if this suspicion is not conveyed in the accession information.

Treatment

- Complete surgical excision is the most widely utilized management.
- A deep shave followed by curettage and electrodessication may also be employed. A 5% to 10% recurrence rate should be anticipated with this modality.
- Intralesional therapy may be successfully used:
  - 5-Fluorouracil (FU): 0.1 mL injected sublesionally; 0.1 to 0.4 mL of 50 mg/mL of 5-FU injected circumferentially. This may be repeated at 1-week intervals, with most lesions responding in two to four treatment sessions.
  - Methotrexate: infiltrate the tumor with 0.4 to 1.5 mL, 12.5 to 25 mg/mL. Local anesthesia is not usually required. Repeat at 2-week intervals. Some patients may require a second treatment. In one study of nine patients, a mean of 1.7 injections was required for resolution.

Clinical Course

Untreated, most KAs will spontaneously involute over about 3 to 6 months. However, about 6% to 10% of KAs will persist and may behave in a manner like other forms of SCC. This includes a risk of metastasis. Therefore, all KAs should be treated.

Fig. 29.10. Patient with developing keratoacanthoma demonstrating a red nodule, with a central keratotic plug. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 29.11. Side view of a developed keratoacanthoma demonstrating a large keratotic plug. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 29.12. Patient with giant keratoacanthoma of the forearm exceeding 4 cm in diameter. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 29.13. Patient with multiple keratoacanthomas of the hand that have recurred following surgery. The patient also had multiple keratoacanthomas at other sites. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Benign Lichenoid Keratosis ICD10 code L43.8 or L43.9

Pathogenesis

Benign lichenoid keratosis (BLK), also known as lichen planus–like keratosis, is a common neoplasm with a vigorous inflammatory infiltrate. In a study of 59 patients, which happened to have clinical photographs taken of the area before the development of BLKs, more than 47% of patients had a preexisting solar lentigo. Under the microscope, a contiguous solar lentigo is identified in over one-third of BLKs. Alternatively, it has been proposed that BLK represents a form of a lichenoid actinic keratosis, because from 5% to 10% of BLKs are contiguous with an actinic keratosis. Finally, it has also been proposed that BLKs are unique neoplasms. In summary, the reason for the lichenoid inflammation is poorly understood.

Clinical Features

- Typically, BLK appears suddenly on the sun-exposed skin of older patients with solar damage.
- BLK is more common in women than men.
- BLK is usually observed on the face, upper chest, and upper extremities.
- BLK is usually solitary, but occasional patients may present with two or more lesions.
- BLK presents as a discrete polygonal papule or nodule, of variable scale. The size ranges from 3 to 10 mm, and the color varies, but admixed hues of pink, red, violet, and brown (Figs. 29.14–29.16) may be seen.
- In some cases, a solar lentigo may be contiguous with the BLK.
- Rare BLK cases manifest Wickham striae, the white reticulate appearance seen in lichen planus.
- About half of BLKs are asymptomatic, with some patients experiencing pruritus or a burning sensation in the lesions.

Diagnosis

- The presentation of a thin scaly lesion, in contiguity with a solar lentigo, suggests the diagnosis.
- In most cases, the clinical assessment is established and malignancy is more optimally excluded by performing a shave biopsy. In rare cases, especially if there is concern for a pigmented lesion, an excision can be performed.

Treatment

- BLK requires no treatment.
- Most lesions are treated with surgical removal, shave biopsy, or excision.
- Cryotherapy is useful, particularly if there is a residual process after biopsy.

Clinical Course

There have been few studies on the clinical course of BLK. Lesions may resolve spontaneously over weeks to months, but some lesions have also been documented to persist for more than 2 years.

Fig. 29.14. Benign lichenoid keratosis of the upper chest of a woman acutely presenting as a round red lesion. Note the presence of several background solar lentigines. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 29.15. Patient with benign lichenoid keratosis of the upper extremity presenting a scaling indurated lesion. Note that it is arising in a solar lentigo that is clearly present on the superior pole of the lesion. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 29.16. Patient with exophytic benign lichenoid keratosis of the hand (lower left) that is clinically difficult to differentiate from an inflamed seborrheic keratosis or squamous cell carcinoma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Inflamed Seborrheic Keratosis ICD10 code L82.0

Pathogenesis

Seborrheic keratoses (SKs) are ubiquitous epithelial skin tumors that likely arise from the follicular infundibulum. Most SKs are tan to brown to black exophytic papillomas that appear as if they could be scraped off the skin (see Chapter 28). For unclear reasons, some SKs may become suddenly inflamed, which may alter the clinical appearance. The history of a sudden change and altered appearance may make it difficult to differentiate SKs from SCCs or from other malignancies.

Clinical Features

- Patients often have multiple SKs.
- SKs may have a history of recent or sudden change in a preexisting lesion.
- Most inflamed SKs are located on the head and neck, trunk, or proximal extremities.
- Many SKs may be associated with pruritus.
- Inflamed seborrheic keratoses may be single or multiple and occur in two distinct clinical patterns:
  - An inflamed papilloma with variable scale, surrounded by a rim of erythema (Fig. 29.17). This clinical pattern is distinctive and easily recognized.
  - An inflamed papilloma with variable increased scale but without a rim of erythema (Fig. 29.18). This clinical pattern can be difficult to differentiate from SCC.

Diagnosis

- Sudden changes in a preexisting SK suggest an inflamed SK, and, in many cases, this diagnosis can be made clinically, especially if the patient has a background of numerous SKs. This impression is substantiated by observation of a "stuck-on" papule or plaque with surrounding erythema.
- When suspicion includes an SCC or melanoma, a biopsy should be performed. In most cases, the histologic features are diagnostic of an SK, and a malignant process may be more confidently excluded.

Treatment

- SKs and inflamed SKs are benign, and no treatment is required. If a lesion is symptomatic, or if there is concern for malignancy, simple deep shave or saucerization removal may be the best option.
- Although SKs can be excised, a shave removal can be performed quickly, and there is no need for sutured removal. The specimen can still be examined histologically, confirming the diagnosis.
- Cryotherapy is also useful for symptomatic inflamed SKs if the diagnosis can be made with certitude, but if there is any doubt, the lesion should be biopsied to enable histologic confirmation of the diagnosis.

Clinical Course

Untreated, some but not all inflamed SKs will spontaneously resolve. However, the behavior of any singular lesion cannot be predicted, and many inflamed SKs will persist.

Fig. 29.17. Elderly man with numerous seborrheic keratoses (SKs) on his back, with several inflamed SKs demonstrating a prominent rim of erythema and scale. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 29.18. Patient with inflamed seborrheic keratosis without a rim of erythema demonstrating an exophytic lesion with scale and an admixture of red, tan, brown, and black colors. The differential diagnosis could include squamous cell carcinoma and melanoma; this lesion should be biopsied for histologic confirmation of the diagnosis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 30
Papular and Nodular Growths Without Scale

Key Terms

Spitz Nevus
- Atypical Spitz nevus
- Atypical Spitzoid tumor
- Desmoplastic Spitz nevi

Dermatofibroma
- Cutaneous fibrous histiocytoma
- Bednar tumor

Papular and nodular neoplasms without scale comprise many important and potentially deadly tumors of the skin. Although this group of lesions is usually without scale, it is important to recognize that any lesion with significant trauma or inflammation may demonstrate some scale. Moreover, the malignant tumors in this group can attain a large size, may become large indurated plaques, or may outgrow a blood supply to become ulcerated. A partial listing of papular and nodular growths is provided in the box.

Papular and Nodular Growths: Differential Diagnosis

Benign
- Benign sweat gland neoplasms
- Dermatofibroma
- Intradermal nevus
- Keloid
- Neurofibroma
- Spitz nevus

Malignant
- Basal cell carcinoma
- Dermatofibrosarcoma protuberans
- Lymphomas
- Malignant sweat gland carcinomas
- Metastatic tumors

IMPORTANT HISTORY QUESTIONS

How long has this lesion(s) been present?

This is an important question because some of the entities in this group, such as dermatofibroma and intradermal nevus, tend to be stable over time, whereas other serious conditions, such as lymphomas and metastatic tumors, may be of recent onset or have rapid growth. Exceptions to this rule exist, such as dermatofibrosarcoma protuberans (DFSP) and some basal cell carcinomas, which can demonstrate slow progressive growth, despite being malignant.

Has the lesion changed?

This question is pertinent when evaluating whether a neoplasm lesion is benign or malignant. An affirmative answer to this question should result in a reduced threshold for performing a diagnostic biopsy.

Have you or any member of your family had similar lesions or a history of cancer?

The answer to this question could suggest a potential genodermatosis, such as neurofibromatosis type 1 (NF-1). Also, if the patient has a history of malignancy, the differential diagnosis should be expanded to include a potential metastasis, with a reduced threshold for performing a diagnostic biopsy.

IMPORTANT PHYSICAL FINDINGS

How old is the patient?

Some lesions, such as Spitz nevi, are more likely to occur in children or young adolescents, whereas dermatofibroma and neurofibromas are more common in postpubertal adolescents and young adults. Malignant tumors, including metastases, are more likely to occur in older adults.

How many lesions are present?

This is a critical finding because some lesions, like Spitz nevi, keloids, or dermatofibromas, are more likely to be solitary, whereas metastases and neurofibromas in NF-1 are more likely to present as multiple lesions.

What is the distribution of the lesions?

Some papular and nodular lesions have characteristic anatomic locations. For example, syringomas (small benign sweat gland tumors) are frequently located in the periocular or genital areas. Dermatofibromas often occur on the lower extremities of young adults, particularly women who shave their legs. Basal cell carcinoma and Merkel cell carcinoma are more likely to occur on sun-damaged skin.

Are any of the lesions ulcerated or necrotic?

Although trauma can cause ulceration in any exophytic process, benign or malignant, ulceration is more common with malignant processes, such as basal cell carcinoma, Merkel cell carcinoma, and metastatic tumors. Metastases in particular may ulcerate due to growth that outstrips the blood supply.

Basal Cell Carcinoma ICD10 code C44 (site dependent)

Pathogenesis

Basal cell carcinoma (BCC) is the most common cutaneous malignancy in the United States, with more than 4 million new cases occurring each year. BCC is derived from basaloid epithelial cells. For white persons older than 65 years, there is a 40% lifetime chance of developing a BCC. BCCs are caused by mutations in one or more genes of the hedgehog signaling pathway, with the most common mutation occurring in *PTCH1*. The major cause of BCC is long-term ultraviolet (UV) light exposure, punctuated by intense overexposure (sunburns). Less often, BCC may occur from genetic disorders (e.g., basal cell nevus syndrome), excessive arsenic ingestion, or radiation or chronic trauma (e.g., vaccination scars, tattoos).

Clinical Features

- Most BCCs occur in adults and elderly persons, especially those with a history of excess sun exposure.
- Most BCCs develop on sun-exposed skin, but occasionally it may occur on non–sun-exposed skin.
- BCC is usually a solitary process, but because of the degree of solar damage that is present in some persons, multiple separate lesions are not uncommon.
- Subtypes of BCC include the following:
  - Nodular (Fig. 30.1): BCC presenting as a translucent (pearly) papule or nodule, often with central ulceration (Fig. 30.2), variable telangiectasias, and possible pigmentation (particularly in persons with darker skin and eyes). Pigmented BCC may be difficult to differentiate from melanoma (Fig. 30.3). This is the most common BCC subtype in the head and neck area.
  - Superficial spreading BCC: plaque-like lesions with translucent papules at the periphery and a pattern of chiefly horizontal growth. This variant is most common on the trunk, especially the back (Fig. 30.4).
  - Infiltrative, desmoplastic, and morpheaform BCC: morphologic growth types that often yield smaller or invasive basaloid islands admixed in a variable collagenous or even keloidal stroma. Clinically, these types of BCCs may be deceptive in appearance, resembling an otherwise unexplained scar.

Diagnosis

- BCC is often suspected based upon the clinical appearance, but final assessment and treatment require a biopsy to prove the diagnosis. Management is affected by the histologic growth pattern observed.
- The biopsy technique is determined by the clinical appearance and characteristics of the lesion, but a shave, punch, incisional, or excisional biopsy may be employed.

Treatment

- BCC is a malignant process, and complete surgical extirpation is the treatment modality most often utilized.
- Electrodessication and curettage is a therapeutic option for cases of superficial or nodular BCC, but this technique does not allow for histologic confirmation of uninvolved surgical margins.
- Mohs (micrographically controlled) surgery is the treatment of choice of large BCCs of the face, for tumors with infiltrative, desmoplastic, and/or morpheaform histology, and for many recurrent BCCs.
- Less often, radiation (primarily for large tumors in elderly patients), photodynamic therapy (PDT), cryosurgery, or topical imiquimod and 5-fluorouracil (superficial forms only) may be used.
- Vismodegib and sonidegib represent hedgehog pathway inhibitors used for locally aggressive or rare metastatic BCC or documented basal cell nevus syndrome, but this is the domain of experts.

Clinical Course

BCC represents a malignant process that can destroy normal structures, and it may even extend into bone. Metastatic BCC is a rare event, but it can occur, with more than 350 cases reported in the medical literature.

Fig. 30.1. Patient with nodular basal cell carcinoma, with a translucent quality, and telangiectasia. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.2. Patient with small, ulcerated, papular basal cell carcinoma. (From the John Aeling Collection, Aurora, CO.)

Fig. 30.3. Patient with ulcerated basal cell carcinoma composed of an admixture of translucent and pigmented areas. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.4. Patient with basal cell nevus syndrome with nodular and superficial basal cell carcinomas, including some that are focally pigmented. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Spitz Nevus ICD10 code D22 (site dependent)

Pathogenesis

Spitz nevi are benign melanocytic neoplasms that are tumors difficult to differentiate from melanoma. The original cases, described by Dr. Sophie Spitz, were called *benign juvenile melanoma*, because of histologic similarities to melanoma, but a generally indolent course. Most Spitz nevi are skin-colored, pink, or red and are nondescript in clinical appearance. The terms *atypical Spitz nevus* and *atypical Spitzoid tumor* (AST) are more recent terms used to describe lesions of uncertain biologic potential that are difficult to differentiate from spitzoid melanoma, even using light microscopy, immunostains, and genetic analysis. Desmoplastic Spitz nevi are lesions characterized by increased stroma, including activated fibroblasts and dense collagen.

Clinical Features

- Spitz nevi occur mostly in whites, of any age, but often in children and adolescents.
- Spitz nevi are typically solitary, but multiple lesions, or even agminated lesions, may occur.
- Spitz nevi present as a papule or nodule that may be dome shaped or even pedunculated.
- Most Spitz nevi are skin-colored, pink, or red, perhaps with telangiectasia (Figs. 30.5 and 30.6). Less often, the lesions are pigmented or resemble other pigmented melanocytic neoplasms.
- Spitz nevi may have overlying scale and/or small keratinous globules that appear white (see Fig. 30.5).
- Historically, most Spitz nevi are of stable size. Rapid growth can occur but is a concerning feature for an atypical Spitz tumor or spitzoid melanoma, and the threshold of biopsy is greatly reduced.
- Spitz nevi may arise on normal skin or in other lesions, including junctional nevi, compound nevi (Fig. 30.7), intradermal nevi, and nevus spilus (Fig. 30.8).

Diagnosis

- Some Spitz nevi are suspected chiefly on clinical grounds. The occurrence of a pink or red papule on the skin of a young white child raises the possibility of a Spitz nevus.
- Spitz nevi with a marked red color may be confused with vascular tumors, such as pyogenic granulomas.
- A final diagnosis is established by shave, punch, or excisional biopsy. The histologic diagnosis is problematic, and it is wise to have any potential Spitz nevus evaluated by an expert dermatopathologist, because some cases are difficult to differentiate from melanoma, especially in adults.

Treatment

- The treatment of Spitz nevi is not standardized. Although some pediatric dermatologists do not re-excise classic Spitz nevi in a child, even when the surgical margin is involved, a 2002 study showed that most dermatologists prefer conservative complete removal of all Spitz nevi.
- The management of atypical Spitz nevi and ASTs is also not standardized, but these lesions are widely considered to have uncertain biologic potential. Nearly all experts recommend complete surgical extirpation, with some authorities even recommending a 1cm clinical margin. The value of a sentinel lymph node (SLN) sampling in an atypical Spitz nevus or AST is unknown. Some series have shown SLN involvement in up to one-third of cases but with dubious prognostic significance.

Clinical Course

The clinical course of Spitz nevi that are not biopsied has never been studied, and never will be studied. The prevalence of Spitz nevi in children and adolescents, relative to that of adults and geriatric patients, suggests that such lesions involute or evolve into conventional nevi. A longitudinal study of suspected Spitz nevi by dermoscopy, with a mean follow-up of 25 months, has revealed dermoscopic features of involution in 80% of the lesions, with the remaining 20% stable or enlarging.

Fig. 30.5. Patient with slightly red papule, with white globules representing aggregates of keratin. (From the William Weston Collection, Aurora, CO.)

Fig. 30.6. Patient with Spitz nevus presenting as a red papule with focal telangiectasia. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.7. Patient with Spitz nevus arising in a compound nevus. (From the William Weston Collection, Aurora, CO.)

Fig. 30.8. Patient with multiple red Spitz nevi occurring within a nevus spilus. The smaller brown lesions are compound and junctional nevi.

Dermatofibroma ICD10 code C23 (site dependent)

Pathogenesis

A dermatofibroma, also known as cutaneous fibrous histiocytoma, is a common tumor of fibrohistiocytic origin. There is debate as to whether dermatofibromas represent a neoplastic or reactive process. In support of the former is the development of lesions at sites of injury (e.g., shaving trauma on the legs, insect bites), but studies of the methylation pattern of the polymorphic X chromosome–linked androgen receptor have demonstrated that dermatofibromas are clonal proliferations, and are probably neoplastic.

Clinical Features

- Most dermatofibromas occur in persons 20 to 50 years of age, with a slight female predominance.
- Patients may report a history of preceding trauma (e.g., shaving trauma on the legs of women, insect bites).
- Most dermatofibromas occur on the lower extremities but also on the trunk, head, and neck.
- Most dermatofibromas are round to oval, firm, painless papules or nodules. The lesion may be exophytic, dimpled, or flat, with a color that varies from skin-colored to tan to brown to violaceous (Figs. 30.9 and 30.10).
- Rare cases with lipidization may have yellow tones. Occasional cases with abundant hemosiderin may appear dark purple (Fig. 30.11) or black (hemosiderotic dermatofibroma).
- With lateral compression, many dermatofibromas will dimple (Fig. 30.12; dimple sign or Fitzpatrick sign).
- Dermatofibromas usually lack overlying scale unless the lesion has been irritated, inflamed, or traumatized.
- Rare patients with a history of immunosuppression, such as systemic lupus erythematosus or HIV infection, may demonstrate the explosive onset of multiple dermatofibromas.

Diagnosis

- The diagnosis is usually made based on the clinical presentation and clinical appearance.
- A deep shave, punch, incisional, or excisional biopsy may be performed on problematic lesions.

Treatment

- Dermatofibromas are benign and do not require treatment, but some cases are subject to minor continued trauma, particularly on lesions of the lower legs of women (from shaving).
- For problematic lesions, extirpation is usually curative. Smaller lesions can be removed with a punch.
- Dermatofibromas of the face, large dermatofibromas (>2 cm), and dermatofibromas in children are more likely to be locally aggressive and should be completely excised, if surgically feasible.

Clinical Course

Dermatofibromas will often grow slowly until they reach a particular size and then will remain stable. Some dermatofibromas will regress, typically over years, but sometimes rapidly. Some large dermatofibromas will behave in an aggressive fashion. A few so-called “metastatic” cases have been reported in the literature, but whether these cases represent dermatofibromas or unrecognized sarcomas is debated.

Fig. 30.9. Brownish-violaceous nodule on the leg of a woman. (From the William Weston Collection, Aurora, CO.)

Fig. 30.10. Patient with exophytic brownish-violaceous nodule with evidence of minor superficial trauma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.11. Patient with hemosiderotic dermatofibroma with purple color. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.12. Positive Fitzpatrick sign. Most dermatofibromas dimple with lateral pressure. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Keloid ICD10 code L91.0

Pathogenesis

Keloids are benign hyperproliferative growths of abnormal collagen. It is thought that keloids represent an aberrant reparative process that follows cutaneous injuries such as lacerations, piercings, or burns. On the anterior chest, keloids are often associated with acne vulgaris. Less often, keloids may arise without a known (or recognized) traumatic event. Keloids are more common in dark-skinned persons, who are 15 times more likely to develop keloids than light-skinned individuals.

Clinical Features

- Keloids are most common in the second and third decades of life, but keloids can occur at any age.
- Keloids usually develop within weeks to months of a cutaneous injury.
- It is not uncommon for keloids to recur in surgical sites, even after attempts at extirpation.
- Keloids present as firm nodules, and a multinodular appearance is possible (Figs. 30.13–30.15).
- Most keloids are skin-colored or hyperpigmented in comparison to the surrounding unaffected skin.
- Keloids may be asymptomatic, pruritic, or even painful.
- Common sites for keloids include the earlobes (secondary to piercing) and the anterior chest (acne).
- Keloids are less common in later life and are rare after the age of 60 years (Fig. 30.16).

Diagnosis

- The clinical presentation of keloids is usually diagnostic. Some keloids can be difficult to differentiate from hypertrophic scars or from other neoplasms, such as dermatofibrosarcoma protuberans.
- Some keloids require a biopsy for definitive diagnosis. Exophytic keloids, with narrow bases, can be shaved, whereas larger lesions are often sampled with a punch (3–6 mm). In most cases, the histologic findings are diagnostic.

Treatment

- Intralesional triamcinolone acetonide (10–40 mg/mL) is the therapy most often utilized. Patients should be warned that keloid injections are painful but become less so with subsequent treatments. Patients should also be warned about potential hypopigmentation or skin atrophy.
- Flurandrenolide tape (Cordran tape) can be applied overnight, for 2 to 6 weeks, but produces skin atrophy in some cases, and at present, it is difficult to obtain.
- Pentoxifylline (400 mg PO tid) has been used with anecdotal success in preventing recurrence; it is hypothesized that this may be due to inhibited collagen production.
- Small keloids may be excised, but recurrence is a problem in about 40% to 60% of cases. Most authorities recommend postoperative intralesional steroid injection and/or oral pentoxifylline to reduce this rate of recurrence.
- Cryosurgery (two 15- to 20-second freeze-thaw cycles) can be performed every 3 weeks for a total of 6 to 10 visits. Significant improvement is seen in about 50% of patients, although the therapy is painful. Cryosurgery can also be combined with intralesional triamcinolone.
- Radiation therapy is effective, but it is not routinely used, chiefly because of the substantially increased risk of squamous cell carcinoma later in life (the typical patient with keloids is young).

Clinical Course

The clinical course of keloids is highly variable. Some keloids quickly achieve a stable size and are asymptomatic, whereas others continue to enlarge for years, or cause pain and discomfort. Spontaneous regression is uncommon, but some flattening of the lesions may be seen in later life.

Fig. 30.13. Dumbbell keloid after ear piercing in a person with light skin. Any skin type can develop keloids. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.14. Keloid of the upper shoulder in a young black man. There was no history of previous trauma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.15. Keloid at vaccination site on the upper arm of a Hispanic man. (From the William Weston Collection, Aurora, CO.)

Fig. 30.16. Keloid developing in a graft site in an older patient after Mohs surgery. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Dermatofibrosarcoma Protuberans ICD10 code C49

Pathogenesis

DFSP, although a rare neoplasm overall, is the most common cutaneous sarcoma. The incidence is estimated to be about 4.2 cases/million persons per year. The cause of the neoplasm is debated, but the tumor is likely derived from $CD34^+$ dendrocytes normally found in the dermis. Most DFSPs possess a reciprocal translocation of chromosomes 17 and 22 or, less often, a supernumerary ring chromosome comprised of portions of chromosomes 17 and 22.

Clinical Features

- DFSP is most common in 20- to 59-year-olds, but can even be present at birth, or in older adults.
- The most common location for DFSP is the trunk, but it may also occur on the arms, legs, or head and neck.
- Typically, DFSP presents as a slow-growing exophytic papule that enlarges to produce additional papules and nodules of various sizes, which protrude above the skin surface (Figs. 30.17–30.20). However, atrophic plaque-like forms, without a protuberant appearance, are not uncommon.
- DFSP is typically skin-colored but it can be red, pink, or white (the latter in atrophic areas).
- DFSP is usually asymptomatic but 10% to 20% of patients with a DFSP report local pain or discomfort.
- Bednar tumor is an uncommon type of DFSP that is pigmented because of admixed melanocytes.

Diagnosis

- The differential diagnosis includes a dermatofibroma, hypertrophic scar, keloid, or any other soft tissue tumor. Often, the diagnosis of a DFSP is suspected because of the clinical history of a slow-growing tumor, with a protuberant papulonodular quality.
- The diagnosis may be established by performing a large deep punch biopsy (6 or 8 mm) or an incisional or excisional biopsy. A shave biopsy should not be performed if DFSP is a serious diagnostic consideration.
- Nearly all DFSPs mark with a CD34 immunohistochemical stain, which is an important part of the overall histologic evaluation.

Treatment

- Complete surgical extirpation of the tumor with 2- to 4-cm margins is the most commonly used treatment.
- Select cases may require adjuvant radiation therapy.
- Mohs surgery has also been used, with some degree of success.
- For patients with unresectable tumors or with metastatic disease, imatinib is the treatment of choice.

Clinical Course

DFSP is a low- to intermediate-grade sarcoma that usually produces damage by local extension into normal structures. In about 5% to 10% of cases, a DFSP contains a fibrosarcomatous element. This subset of DFSP with fibrosarcomatous change often behave in a more aggressive fashion. About 5% of all DFSPs will produce metastatic disease, with the lungs and lymph nodes most often involved.

Fig. 30.17. Patient with early dermatofibrosarcoma protuberans on the anterior chest presenting as an enlarging plaque with several papules.

Fig. 30.18. Patient with dermatofibrosarcoma protuberans on the shoulder demonstrating atrophic areas and nodular growth. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.19. Large dermatofibrosarcoma protuberans with atrophic areas, papules, and a large nodule. This child is 8 years old. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.20. Neglected dermatofibrosarcoma protuberans in an institutionalized patient presenting as a large mass composed of multiple nodules.

Pathogenesis

Merkel cell carcinoma (MCC) is an aggressive, primary cutaneous neuroendocrine carcinoma that is most often comprised of cords, sheets, or strands of small basaloid cells, with minimal cytoplasm (Fig. 30.21). The disputed cell of origin is thought to be the Merkel cell, which is associated with nerve endings found in the basal layer of the epidermis. The oncogenic events are not fully understood, but recent discovery of Merkel cell polyomavirus in MCC has suggested that this virus is involved in tumorigenesis. Moreover, because MCC occurs in elderly persons, in areas of marked solar exposure, it is also believed that solar damage is important. Immunosuppression is also associated with an increased risk for the development of MCC.

Clinical Features

- MCC is most common in white men and typically develops after the age of 50 years. Most cases occur in those 70 years of age or older.
- MCC occurs most often on sun-exposed skin (>80%), with the head and neck particularly affected.
- MCC usually presents as a pink or red papule or nodule of variable size (Figs. 30.22 and 30.23).
- Ulceration of MCC is common (Fig. 30.24), probably due to a high proliferative rate.
- Metastatic MCC is clinically indistinguishable from a primary tumor, but multiple lesions should strongly suggest metastatic disease (Fig. 30.25).

Diagnosis

- MCC does not have a singular diagnostic appearance, and all cases require an adequate biopsy (≥4-mm punch biopsy or incisional or excisional biopsy that extends into the subcutaneous fat).
- The pathologist or dermatopathologist can usually make a specific diagnosis using immunohistochemical stains. Some cases may be difficult to differentiate from metastatic small cell carcinoma of the lung or metastatic neuroendocrine carcinoma that is not of cutaneous origin.

Treatment

- MCC is an aggressive malignancy, and patients should be referred to an appropriate specialty care environment. Treatment options will depend on the location, general health of the patient, and clinical stage.
- Imaging studies (e.g., computed tomography [CT], magnetic resonance imaging [MRI], positron emission tomography [PET] scan) and sentinel lymph node biopsy are often used to aid staging.
- Treatment uses surgical excision, perhaps micrographic surgery, sentinel node sampling, and postsurgical radiation to local and regional lymph nodes. Immunotherapy and chemotherapy may be used for patients with advanced disease.

Clinical Course

MCC is an aggressive malignancy with a high risk of local recurrence (40%), regional metastases (55%), and distant metastases (36%). Studies have suggested that men and those with tumors of the head and neck often experience a more aggressive course. Women, younger persons, and those with tumors of the extremities may have a generally more favorable course. The 5-year, disease-specific survival rate in one study of 251 patients from a single institution was just 64%, a rate lower than that of melanoma.

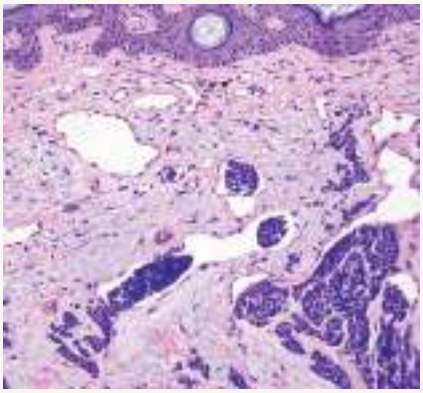

Fig. 30.21. Patient with cords and strands of basaloid cells in the dermis with lymphatic invasion.

Fig. 30.22. Patient with Merkel cell carcinoma, a small red nodule on sun-damaged skin. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.23. Patient with Merkel cell carcinoma, a large pinkish-red nodule on sun-damaged acral skin.

Fig. 30.24. Patient with Merkel cell carcinoma, an ulcerated red nodule on sun-damaged skin. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.25. Patient with metastatic Merkel cell carcinoma presenting as multiple red papules and small nodules. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Cutaneous Lymphomas ICD10 code C81-C96 (dependent on type)

Pathogenesis

Lymphomas involving the skin may be primary (originating in the skin) or secondary (originating in lymph nodes or another site and only involving the skin later). Common primary cutaneous lymphomas in the skin may be of T cell or B cell origin. Although most lymphomas are caused by spontaneous mutations, some forms are associated with immunosuppression, *Borrelia burgdorferi* (Lyme disease) infection, or Epstein-Barr virus infection. A greatly simplified classification scheme for cutaneous lymphomas is presented in the box.

Primary Cutaneous Lymphomas: Simplified Classification

T Cell Lymphomas

- Mycosis fungoides and variants
- Adult T cell leukemia and lymphoma
- Primary cutaneous CD30+ lymphoproliferative disorders
- Subcutaneous panniculitis–like T cell lymphomas
- Extranodal natural killer (NK) and T cell lymphoma, nasal type
- Primary cutaneous peripheral T cell lymphoma, unspecified

B Cell Lymphomas

- Primary marginal zone B cell lymphoma
- Primary cutaneous follicle center B cell lymphoma
- Primary cutaneous diffuse large B cell lymphoma, leg type

Clinical Features

- Lymphomas in the skin may present as a single lesion (Fig. 30.26) or multiple lesions.
- Some cutaneous lymphomas have characteristic distributions. For example, B cell lymphoma often presents on the head and neck or trunk, whereas mycosis fungoides often presents in doubly protected areas, beneath clothing and undergarments.
- Lymphomas presenting in the skin usually present as red or violaceous papules, plaques, tumors, or nodules (Fig. 30.27–30.29). Some lymphomas may produce ulcerative or fungating nodules or may regress.

Diagnosis

- The clinical features of lymphoma are not specific enough for clinical diagnosis, and an adequate biopsy is required (e.g., large punch biopsy, incisional or excisional biopsy that includes the subcutis).
- If palpable lymph nodes are present, they should also be surgically biopsied for histologic evaluation.
- A pathologist, hematopathologist, or dermatopathologist may use immunohistochemical staining, flow cytometry, and polymerase chain reaction (PCR)–based gene rearrangement studies, which are necessary to arrive at a full assessment.
- Once biopsy results are finalized, clinicopathologic correlation and clinical staging are necessary. It is important to stress the limitations of the pathologist, hematopathologist, and dermatopathologist and recognize that the biopsy report is only part of the final assessment. No diagnosis is considered final until the patient has been staged and totality of the circumstances assessed.

Treatment

- Treatment of a lymphoma in the skin depends on whether it is a primary (of cutaneous origin) or secondary lymphoma (originating from another site, such as the lymph node).
- Treatment ranges from excision or local radiation for most primary cutaneous B cell lymphomas of low grade, to topical medicaments or UV therapy for lower stage mycosis fungoides (MF-CTCL), to advanced therapy for higher grade disease.

Clinical Course

Low-grade primary cutaneous B cell lymphoma (follicle center cell, marginal zone) has a 5-year survival rate in excess of 95%. Most patients with lower stage cutaneous T cell lymphoma have an excellent survival rate, but the disease can advance or progress, for unclear reasons. Clearly, the overall prognosis is affected by the specific diagnosis and circumstances.

Fig. 30.26. Patient with large red tumor due to peripheral T cell lymphoma, unspecified. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.27. Patient with large partially necrotic tumor diagnoses as primary cutaneous anaplastic large cell lymphoma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.28. Patient with large red nodule on the forehead, a primary cutaneous follicle center lymphoma. (From the William Weston Collection, Aurora, CO.)

Fig. 30.29. Patient with numerous papules and small nodules in primary cutaneous marginal zone lymphoma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Metastatic Tumors ICD10 code C49

Pathogenesis

The incidence of malignancies becoming metastatic to involve the skin has varied in studies, but about 1% to 9% of persons with an internal malignancy will develop skin metastases. In most cases, skin metastases occur in later stages of disease. However, for some patients, it may be the presenting feature of a malignancy. Although most metastatic deposits involve the dermis, a subset of patients may present with deep subcutaneous nodules (see Chapter 35). Malignancies may arrive in the skin by lymphatic or vascular distribution, by surgical implantation, or by local extension. Certain cancers have a varying propensity to involve certain areas of the skin (see box).

Tumors Metastatic to Skin: Common Distribution Patterns

- Breast carcinoma—chest wall, scalp
- Cervical carcinoma—perineum
- Colon carcinoma—abdomen, umbilicus
- Gastric carcinoma—abdomen, umbilicus
- Lung carcinoma—chest wall, scalp
- Pancreatic carcinoma—umbilicus, scalp
- Ovarian carcinoma—umbilicus
- Prostate carcinoma—lower abdomen, perineum
- Renal carcinoma—scalp
- SCC, oropharyngeal—head, neck, shoulders

Clinical Features

- Metastatic deposits in the skin occur more often in elderly persons, simply because they are more likely to have internal malignancies.
- Cutaneous metastatic tumors may affect any region of the body, but different malignancies may have a special affinity for certain anatomic sites.
- Skin metastases may be solitary (Fig. 30.30) or numerous (Fig. 30.31).
- Skin metastases are usually asymptomatic, but pain may occur with nerve impingement or ulceration.
- Primary lesions vary from small papules to large nodules.
- Although most metastatic lesions are red or violaceous in color, some malignancies, such as melanoma, may demonstrate blue-black pigmentation (Fig. 30.32); others may simply appear skin-colored.
- Metastatic lesions may demonstrate an unremarkable overlying surface or may manifest ulceration or necrosis (Fig. 30.33; see Fig. 30.32).
- The patient may be cachectic due to the overall metastatic burden.

Diagnosis

- Metastatic tumors do not have a characteristic appearance, but the definitive diagnosis is established by deep punch, incisional, or excisional biopsy.
- It is critical to provide the pathologist and/or dermatopathologist with information regarding known internal malignancies so that a rapid, economical, accurate histologic diagnosis can be rendered.
- Findings that should arouse suspicion for a metastatic nodule to the skin include the following:
  - History of a known internal malignancy
  - History of rapid growth
  - History of rapid onset of multiple lesions
  - History of recent unexplained or involuntary weight loss

Clinical Course

Clearly, the clinical course of metastatic disease that secondarily involves the skin depends on the primary tumor and systemic treatment options available. In general, once a patient develops multiple metastatic deposits in the skin, the prognosis is poor, and most patients die from the primary malignancy within 2 years.

Fig. 30.30. Solitary, nondiagnostic violaceous papule on the scalp in a patient with adenocarcinoma of the lung. This is a common site for lung metastasis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.31. Patient with numerous red papules and nodules of metastatic breast carcinoma of the chest wall and upper arm. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.32. Patient with metastatic melanoma demonstrating blue-black papules and nodules with variable necrosis. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 30.33. Patient with a solitary, nondiagnostic necrotic tumor of the upper thigh, an atypical location for metastatic small cell carcinoma of the lung. (From the Walter Reed Army Medical Center Collection, Washington, DC.)

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Chapter 31
Pigmented Lesions

Key Terms

Solar Lentigo
- Lentigo senilis
- Lentigo solaris

Simple Lentigo
- Labial melanotic macules
- Lentigo simplex
- Melanonychia striata
- Simple lentigo

Acquired Melanocytic Nevus
- Acquired moles
- Acquired nevi
- Compound nevus
- Intradermal nevus
- Junctional nevus

Nevus Spilus
- Speckled lentiginous nevus

Atypical (Dysplastic) Nevus
- Atypical nevi
- Clark nevi
- Dysplastic nevi

Lentigo Maligna
- Hutchinson freckle

Pigmented lesions include not only melanocytic neoplasms, such as nevi and melanoma, but also some pigmented keratinocytic processes, such as pigmented seborrheic keratoses, and some hamartomas, such as a Becker nevus. The evaluation of pigmented lesions and hence, this chapter, is especially important because a delayed or missed diagnosis of melanoma may lead to morbidity, or even mortality, in a patient.

IMPORTANT HISTORY QUESTIONS

How long has this lesion been present?

This is an obvious but often overlooked inquiry. The patient's response may range from useful to uncertain to flat-out misleading. Moreover, the development of a "new" lesion is not indicative of only melanoma but it should prompt further inquiry and a more detailed examination of the lesion.

Has the lesion changed?

Any change in a melanocytic lesion should also prompt a more detailed and careful physical examination.

Has the lesion bled?

Benign lesions can be traumatized, with resultant bleeding, but an affirmative response should raise the index of suspicion with regard to cancer.

Do you have a history of an atypical dysplastic nevus or melanoma?

Persons with atypical nevi and/or past melanoma are at increased risk for melanoma.

Is there a family history of atypical nevi or melanoma?

There is a familial tendency to develop atypical moles, which increases one's personal risk of melanoma. Also, a first-degree relative with melanoma increases one's own risk of developing melanoma.

Do you have a history of indoor tanning bed use?

Tanning bed use is associated with an increased risk for melanoma, especially in less common areas, like the buttocks.

Have you ever had sunburn that produced blisters, and, if so, when did you burn?

Persons with multiple blistering sunburns, particularly in youth, are more likely to develop melanoma.

IMPORTANT PHYSICAL FINDINGS

What is the patient's skin type?

Persons with fair skin, blue eyes, and light-colored hair are more likely to develop melanoma. Persons with red hair have an elevated risk of melanoma, and melanoma in this population may be amelanotic.

How many moles does the patient have on his or her body?

A large number of nevi, whether atypical or dysplastic in appearance, or not, are at increased risk for melanoma. Most patients with an atypical/dysplastic nevus syndrome usually have more than 100 nevi.

Do any of the pigmented lesions on a patient's body look different from the rest?

Sometimes called the *ugly duckling sign*, it is always useful to identify any pigmented lesion that looks remarkably different from the patient's other pigmented lesions.

Do any of the pigmented lesions on a patient's body violate the ABCDEs of melanoma?

These are: *A,* asymmetry, *B,* border irregularity, *C,* color variegation (multiple colors), *D,* diameter more than 6 mm (about the size of a pencil eraser), and *E,* evolutionary behavior (e.g., growing, bleeding, itching, burning). This does not mean that anything that violates a component of the ABCDEs is melanoma, but it does indicate that such a lesion must be carefully evaluated, and possibly biopsied, to exclude melanoma.

Solar Lentigo ICD10 code L81.4

Pathogenesis

A solar lentigo, also referred to as *lentigo solaris* and *lentigo senilis*, results from hyperpigmentation of keratinocytes, with a slightly increased number of singular melanocytes. Lentigines are caused by increased cumulative ultraviolet (UV) light exposure. This latter characteristic explains the photodistribution of lentigines and the appearance of lentigines in later life. Although the term *liver spot* is occasionally used by laypersons, it is a term that should be discouraged because lentigines have nothing to do with liver disease.

Clinical Features

- Most solar lentigines occur in persons with fair skin.
- Solar lentigines occur on photoexposed skin, such as the head and neck, upper anterior chest, forearms, and dorsal hands.
- Solar lentigines are usually multiple and are associated with dermatoheliosis (sun-damaged skin).
- Solar lentigines are highly variable in size, ranging from 1 mm to larger than 1 cm.
- Solar lentigines exist as a round or oval macule or patch, which is tan to dark brown. Rare lesions may be black (Figs. 31.1–31.3).
- Solar lentigines are usually symmetric, but some irregularities may be present on occasion.

Diagnosis

- The occurrence of multiple, uniform, tan to brown macules and small patches on the sun-exposed skin of a fair-skinned person with sun damage is usually diagnostic.
- The differential diagnosis includes melanoma in situ (lentigo maligna type), which also occurs in older persons and on sun-damaged skin. In general, melanoma in situ (lentigo maligna type) is larger, with greater irregularity and with more variegated color.
- In problematic cases, a biopsy can be done to exclude melanoma in situ (lentigo maligna type).

Treatment

- No treatment is required for lentigines.
- Broad-spectrum sunscreen and other sun protective measures will lessen melanin production and prevent further sun damage.
- If ablation is desired, one can use liquid nitrogen cryotherapy, usually with only about a 5-second freeze to avoid overtreatment. Destructive therapy of pigmented lesions should be avoided unless the assessment of a benign condition is rendered with the utmost confidence.
- Lasers targeting melanin can be used in select cases, but this is generally done by a specialist.
- Chemical peels and topical bleaching formulations, such as 2% to 6% hydroquinone or 2% mequinol and 0.01% tretinoin (Solage) can be used, but, again, the assessment of benign lentigo must be made with the utmost confidence. Often bleaching from topical agents is incomplete.

Clinical Course

Solar lentigines, when confidently assessed, are benign and require no treatment. Lentigines can be difficult to differentiate from melanoma in situ (lentigo maligna type). Lentigines usually persist and may even increase in number over time with continued sun exposure.

Fig. 31.1. Sun-damaged atrophic skin on the back of a patient's hand with numerous solar lentigines that vary in color from tan to brown to almost black. The area of more proximal discoloration represents solar purpura.

Fig. 31.2. Patient with sun-damaged atrophic skin on the scalp, with numerous solar lentigines that vary in color from tan to brown. The area of yellowish discoloration represents solar elastosis, and the inflamed scaly lesion is an actinic keratosis.

Fig. 31.3. Patient with mildly sun-damaged skin on the leg, with one brown, slightly scaly solar lentigo and a smaller solar lentigo.

Simple Lentigo ICD10 code L81.4

Syndromes With Multiple Lentigines
- Carney complex: blue nevi, atrial myxomas, and endocrinopathies
- Centrofacial lentiginosis syndrome: lentigines, spina bifida, mental and learning disorders
- Leopard syndrome: electrocardiographic abnormalities, ocular hypertelorism, pulmonary stenosis, abnormalities of the genitalia, retardation of growth, deafness
- Peutz-Jeghers syndrome: intestinal polyposis

Pathogenesis

In contrast to a solar lentigo, a simple lentigo, or lentigo simplex, is unrelated to sun exposure. Simple lentigines are genetically predetermined and may be seen in some syndromes (see box). Simple lentigines, in contrast to solar lentigines, may occur on mucosal surfaces, such as the lips and genitalia, and are caused by increased melanocytes at the dermoepidermal junction, with increased production of melanin. There is often elongation of epidermal rete ridges as well. Simple lentigines lack genetic mutations related to UV light exposure.

Clinical Features

- Simple lentigines can arise at any age, but most cases occur in children and young adults.
- Simple lentigines can be solitary (Fig. 31.4) or multiple. When lesions are numerous, consider evaluation for a syndrome (Figs. 31.5–31.7).
- Simple lentigines can occur on any site, but the palms, soles, genitalia, and lips are common sites.
- Simple lentigines are usually uniform, round to oval macules, brown to black in color, about 1 to 4 mm in size. Rarely, larger lentigines exist.
- Oral mucosal lentigines are often called *labial melanotic macules*. Genital lentigines may occur as well. In the nail unit, a pigmented streak caused by a lentigo is referred to as *melanonychia striata*.

Diagnosis

- The homogeneous and banal character of simple lentigines is usually diagnostic.
- The differential diagnosis of simple lentigines includes junctional nevi and solar lentigines; the latter occurs on sun-damaged skin and in older persons.
- The diagnosis of a simple lentigo, particularly as distinguished from a junctional nevus or malignant melanocytic process, can be established by biopsy.

Treatment

- Simple lentigines, when confidently assessed, require no treatment and are benign entities.
- As with all pigmented proliferations, if the lesion continues to enlarge, darken, or bleed, the patient should return for re-evaluation considering the changing nature of the process.
- If removal is desired, a shave, punch, or excision biopsy is often the treatment of choice.

Clinical Course

Simple lentigines, like all melanocytic processes, could, in theory, progress to malignant melanoma, but the risk is extremely small. Simple lentigines are not considered premalignant.

Fig. 31.4. Patient with slightly irregular simplex lentigo on sun-damaged skin. Simple lentigines can arise on sun-exposed skin or non–sun-exposed skin. This one was removed for histologic diagnosis.

Fig. 31.5. Multiple genital lentigines in a woman with Carney complex. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 31.6. Patient with centrofacial lentiginosis syndrome. Also present is a *café au lait* macule.

Fig. 31.7. Multiple lentigines on the lip and oral mucosa in a patient with Peutz-Jeghers syndrome. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Acquired Melanocytic Nevus ICD10 code D22 (site dependent)

Pathogenesis

Acquired melanocytic nevi, also known as *acquired nevi*, or *acquired "moles,"* are the most common of benign melanocytic neoplasms. Acquired nevi develop in early childhood and increase in number until adulthood, only to then regress, and decrease in number, in later adulthood. Several factors, including a family history of numerous nevi, light skin, light hair and eye color, and greater sun exposure in youth, are associated with increased nevi. In a longitudinal study of children in Colorado, at 8 years of age, boys had about 30 melanocytic nevi, whereas girls had about 25 melanocytic nevi. Pigmented melanocytic nevi may exhibit nests of cells only at the dermoepidermal junction (junctional nevus), only in the dermis (intradermal nevus), or in both locations (compound nevus). Intradermal nevi are not usually pigmented.

Clinical Features

- Acquired melanocytic nevi appear first in early childhood and increase in number until adulthood.
- Most junctional or compound nevi occur on skin that is intermittently or chronically sun-exposed.
- Junctional nevi are usually tan to black in color, 1 to 6 mm in size, and with a round or oval shape and sharp circumscription.
- Compound nevi are usually raised papules, tan to dark brown in color, with sharp circumscription and regular margins (Figs. 31.8–31.10). Their size is variable, with most compound nevi being between 2 and 8 mm in size, but larger compound nevi are not uncommon (see Fig. 31.10).
- Acral nevi tend to be junctional in nature and are often heavily pigmented (Fig. 31.11).
- Thickened dark hairs may be prominent in larger compound nevi.
- Melanocytic nevi may darken during pregnancy in response to elevated estrogen levels.

Diagnosis

- Most benign melanocytic nevi may be diagnosed based upon the clinical appearance, but sometimes it can be difficult to distinguish benign nevi from pigmented seborrheic keratoses or melanoma. When patients have multiple nevi, most tend to be roughly similar in appearance and size, and outliers should be treated with greater suspicion (the so-called "ugly duckling sign").
- If there is concern regarding a pigmented lesion, a deep shave, punch, or excisional biopsy should be performed. A punch biopsy or excision that removes the pigmented lesion completely allows the pathologist or dermatopathologist to examine the lesion in its entirety and prevents recurrences.

Treatment

- No treatment is required for lesions that may confidently be assessed as benign nevi.
- New or changing lesions, particularly those occurring after 40 years of age, unusually large lesions, irregular or inflamed lesions, and/or lesions substantially different from others on the body should be biopsied.

Prognosis

It is thought that melanocytic nevi regress or involute in the elderly. One study reported that by age 70 patients had an average of two melanocytic nevi on their bodies, although one author (WAH), who maintains a textbook on geriatric dermatology, and routinely sees older patients, believes this is exaggerated. It has been estimated that the rate of development of melanoma in a wholly benign nevus may be as low as 1:100,000/year.

Fig. 31.8. Patient with a dark brown, relatively symmetric compound nevus. (From the Joanna Burch Collection, Aurora, CO.)

Fig. 31.9. Patient with two compound nevi with a fried egg appearance and a flat macular junctional nevus. (From the Joanna Burch Collection, Aurora, CO.)

Fig. 31.10. Unusually large acquired, light brown, symmetric compound nevus. The patient also has numerous freckles. (From the Joanna Burch Collection, Aurora, CO.)

Fig. 31.11. Acquired acral junctional nevus in an adult, with an irregular outline. This lesion was removed for histologic examination. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Congenital Melanocytic Nevus ICD10 code D22 (site dependent)

Pathogenesis

The pathogenesis of congenital melanocytic nevi is poorly understood, but studies have suggested congenital melanocytic nevi behave differently from acquired melanocytic nevi. For example, acquired nevi are monoclonal populations of nevomelanocytes, whereas congenital melanocytic nevi are comprised of multiple clones. It has been estimated that about 1% to 5% of the population has a congenital nevus.

Clinical Features

- Congenital nevi are present at birth.
- Nevi that develop in the first 2 years of life may be called *congenital nevus–like* melanocytic nevi.
- A new classification system was proposed in 2013, but the former classification system is still the most widely used by most dermatologists:
  - Small—less than 1.5 cm (Fig. 31.12), with a risk of malignant degeneration equal to acquired nevi.
  - Medium—less than 1.5 to 19.9 cm (Fig. 31.13), with an elevated but imprecisely known risk of malignant degeneration.
  - Large (giant)—larger than 19.9 cm (Figs. 31.14 and 31.15), with an estimated rate of malignant degeneration of about 5% to 10%/lifetime.
- Large congenital nevi may demonstrate one or more smaller satellite lesions (see Fig. 31.15).
- Congenital nevi with satellite lesions, or those overlying the spine, are more likely to be associated with neurocutaneous melanosis, with hydrocephalus in two-thirds of patients, and with possible seizures.

Diagnosis

- The diagnosis of a congenital nevus is usually established on clinical and historical grounds.
- In some cases, a punch or incisional biopsy can be done for histologic examination, particularly if there is concern for malignant degeneration in a particular area.
- Some authorities recommend that brain or spinal magnetic resonance imaging (MRI) be performed in the setting of large congenital nevi because of the risk of central nervous system (CNS) involvement (neurocutaneous melanosis), but other authorities reasonably question the value of such imaging because there is no adequate treatment for neurocutaneous melanosis.

Treatment

- If any congenital nevus demonstrates changes in size, color, or shape, or if there is a new nodule, ulceration, or features of regression, the lesion must be examined by an expert. It is likely that a biopsy will be performed, which should be examined by a dermatopathologist with expertise in this area.
- There is no standardized management for congenital melanocytic nevi that are stable.
- For small and medium-sized lesions, it is often reasonable to adopt a wait and watch approach, instructing patients and family members to monitor lesions, in cooperation with a health care provider.
- Large or giant congenital nevi are problematic because of the definitive increased risk of malignant degeneration, yet prophylactic excision may be surgically problematic. Ultimately, the risks of general anesthesia in any surgical intervention(s) must be balanced against the risk for melanoma arising in the lesion.

Clinical Course

The risk of malignant melanoma arising in a congenital melanocytic nevus is difficult to calculate with certitude for any individual lesion. Older classification schemes fostered this imprecision due to wide ranges in category sizes, but in general, the larger the lesion, the higher the risk of malignant degeneration. The lifetime risk for malignant melanoma developing in a giant congenital nevus may be as high as 5% to 10%. The risk for medium-sized congenital nevi, and even small congenital nevi, is clearly lower, but studies have reported conflicting data.

Fig. 31.12. Small oval congenital nevus on the upper thigh of an infant. The smaller, darker papule should be carefully monitored for change.

Fig. 31.13. Patient with a medium-sized congenital nevus of the hand. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 31.14. Patient with a giant congenital nevus of the scalp, with enlarged dark hairs. (From the Joanna Burch Collection, Aurora, CO.)

Fig. 31.15. Patient with a giant congenital nevus, with numerous smaller satellite congenital nevi. (From the William Weston Collection, Aurora, CO.)

Halo Nevus ICD10 code D23.9

Pathogenesis

Halo nevi (Sutton nevi) are caused by a cell-mediated inflammatory response directed against nested nevomelanocytes and adjacent junctional epidermal melanocytes. Microscopic examination of a halo nevus reveals a dense infiltrate of lymphocytes surrounding these nests, with a loss of melanocytes at the dermoepidermal junction in the clinically depigmented areas. Research completed by two of the authors (JEF, WAH) showed that normal acquired melanocytic nevi are "immunologically invisible" and do not express human leukocyte antigen (HLA) markers that trigger a host response. For reasons unknown, these same HLA markers are expressed in halo nevi, and this engenders an immunologic response in the host. Patients with vitiligo are more likely to develop halo nevi.

Clinical Features

- Halo nevi usually develop in children and adolescents, although adults may also develop them. There is no predilection for sex or ethnic background.
- Halo nevi are most common on the back (Fig. 31.16).
- Halo nevi usually develop in acquired melanocytic nevi and may be solitary or multiple.
- Early halo nevi consists of skin-colored, tan, or brown papules (Fig. 31.17), with a sharply demarcated area that is depigmented (white skin).
- Mature halo nevi demonstrate loss of the central nevus and replacement with a discrete, round to oval area of depigmentation (white skin).

Diagnosis

- The clinical presentation is usually diagnostic of a halo nevus, but other melanocytic lesions (e.g., blue nevi, congenital nevi [Fig. 31.18], atypical nevi, melanoma) may also demonstrate a halo.
- In exceptional cases, particularly in older persons, a biopsy should be performed to establish the diagnosis firmly and to exclude a malignant melanocytic neoplasm with an inflammatory host response.
- Adults who present with halo nevi should have a complete cutaneous examination, because in rare cases, halo nevi may be associated with melanoma at other sites. An eye examination, to exclude ocular melanoma, should be recommended.

Treatment

- In classic cases no treatment is necessary and is the preferred management in children and adolescents.
- Atypical-appearing halo nevi can be surgically removed. The biopsy only needs to include the central papule and not the entire halo.

Clinical Course

Halo nevi usually resolve over a period of months to a year, although some rare cases may demonstrate a halo that persists for more than a decade. Some cases demonstrate a recurrence of the nevus that incited the halo phenomenon.

Fig. 31.16. Multiple halo nevi on the back of an adolescent. The back is the most common location of halo nevi. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 31.17. Close-up of a halo nevus demonstrating a slightly pink halo. Pink or reddish tints are more commonly seen in new lesions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 31.18. Patient with a congenital halo nevus. (From the William Weston Collection, Aurora, CO.)

Café au Lait Spot ICD10 code L81.4

Pathogenesis

A *café au lait* macule (CALM) is a sharply demarcated area of uniform hyperpigmentation that is present at birth or develops in early childhood. Despite the analogy to coffee with milk, the color can be even darker brown, particularly in persons with darker skin. CALMs are common and are seen in about 10% of the population. The pathogenesis of CALMs is poorly understood. Histologically, CALMs are characterized by a normal number of melanocytes but with increased and abnormally packaged melanosomes.

Syndromes With Multiple *Café au Lait* Spots
- McCune-Albright syndrome
- Neurofibromatosis type I
- Watson syndrome

Clinical Features

- CALMs are present as birth or develop during early childhood.
- CALMs may be solitary or multiple and are most common on the trunk and pelvic girdle.
- CALMs vary in size from less than 1 mm to more than 40 cm in size.
- Smaller CALMs are usually ovoid, whereas larger CALMs often have more irregular borders.
- CALMs vary in color from light tan (Fig. 31.19) to brown (Fig. 31.20).
- CALMs do not have surface changes, color variegation, or increased or enlarged hairs.
- CALMs are associated with three important syndromes:
  - McCune-Albright syndrome: one or more CALMs are present, often unilaterally, and the lesions often possess irregular borders (so-called coast of Maine). Patients may also have unilateral polyostotic fibrous dysplasia or endocrinopathies.
  - Neurofibromatosis type I: typically six or more CALMs with smooth borders (so-called coast of California) that are more than 5 mm in size (Fig. 31.21) or small CALMs in the axillae (incorrectly called *freckling*). This latter finding is called *Crowe sign* (Fig. 31.22).
  - Watson syndrome: CALMs associated with pulmonary valve stenosis, short stature, and low intelligence. Patients with Watson syndrome may also manifest Crowe sign.

Diagnosis

- The diagnosis of a CALM is established by the clinical appearance.
- Biopsies are not usually performed because the histologic findings are not easily recognized.

Treatment

- CALMs require no intervention unless treatment is desired for cosmetic purposes.
- Lasers targeting pigment: pulsed dye lasers, frequency-doubled Nd:YAG lasers, and Q-switched alexandrite lasers may be used to lighten CALMs. There is typically a varied response to laser treatment, and also there is potential for scarring, undesired pigmentary alteration, and recurrence.

Clinical Course

Once present, CALMs persist indefinitely, but do not have any known malignant potential.

Fig. 31.19. Patient with a large *café au lait* spot of the ear, face, neck, and chest. (From the William Weston Collection, Aurora, CO.)

Fig. 31.20. Despite the name, *café au lait* spots can be brown, especially in patients with darker skin color or in McCune-Albright syndrome. (From the Joanna Burch Collection, Aurora, CO.)

Fig. 31.21. Patient with two *café au lait* spots larger than 5 mm. Note that there are also two smaller lesions that would not meet the criteria for establishing a diagnosis of neurofibromatosis type I.

Fig. 31.22. Crowe sign in a patient with neurofibromatosis type I. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Nevus Spilus ICD10 code L81.4

Pathogenesis

Nevus spilus, also known as a speckled lentiginous nevus, is a relatively common melanocytic lesion. Epidemiologic studies have reported a prevalence of 1.3% and 2.1% among all persons. Nevus spilus usually presents as a tan macule, similar to a CALM, with other multiple, more intense accumulations of pigmentation. Most cases of nevus spilus present first as a CALM that gradually develops more pigmented areas over time. The pathogenesis of nevus spilus is not well understood.

Clinical Features

- Nevus spilus may be present at birth, usually as a CALM, but may not be evident until childhood.
- Nevus spilus may involve any site of the body.
- Months to years after birth, the CALM will develop additional pigmented areas within it, typically 1 to 3 mm in size (Figs. 31.23–31.25). The speckles may be flat macular or may be elevated, indicative of a junctional or compound nevus. Less often, other types of melanocytic leisons arise within the nevus spilus, including Spitz nevi and atypical nevi.
- The size of lesions can vary from less than 1 cm to more than 30 cm, and lesions may even have a zosteriform pattern (Fig. 31.26).

Diagnosis

- The clinical presentation of nevus spilus, with a tan macule and speckled hyperpigmentation, is rather distinctive. This same pattern may be mimicked by some congenital nevi, but the distinction is somewhat moot because some dermatologists consider nevus spilus to be a subset of congenital nevi.
- Rare cases may require a biopsy, but it is imperative that the clinician doing the biopsy convey the clinical impression of nevus spilus, by description or by an attached photograph, so that the pathologist or dermatopathologist is better prepared to recognize the asymmetric and sometimes subtle findings.

Treatment

- Nevus spilus is a benign lesion, and no treatment is required.
- There are cases of a malignant melanoma arising in nevus spilus, but this is a rare event, and the occurrence is no different from melanoma arising in an acquired or congenital nevus.
- Removal of the darker speckled areas, by punch excision, may render the lesion less obvious, but it can also lead to scarring or surgical complications.
- Where atypical nevi (or melanoma) have arisen within nevus spilus, the entire lesion can be excised.
- Anecdotally, other treatment options have included laser therapy or intense pulsed light therapy.

Clinical Course

Once well established, nearly all nevus spilus lesions remain stable. Although the incidence has not been well studied, atypical (dysplastic) nevi, melanoma in situ, and melanoma have been reported to occur in select cases of nevus spilus. Therefore, the patient should be educated to note any changes in a previously stable nevus spilus and report these changes immediately so that a biopsy can be considered.

Fig. 31.23. Patient with nevus spilus demonstrating a sharply circumscribed *café au lait* macule, with numerous areas of speckled pigmentation. (From the Joanna Burch Collection, Aurora, CO.)

Fig. 31.24. Patient with nevus spilus of the neck demonstrating a sharply circumscribed *café au lait* macule, with numerous areas of speckled pigmentation. (From the William Weston Collection, Aurora, CO.)

Fig. 31.25. Patient with a larger nevus spilus of the face involving cutaneous surface of the upper and lower lips. (From the William Weston Collection, Aurora, CO.)

Fig. 31.26. Patient with a giant nevus spilus, with a zosteriform distribution. (From the William Weston Collection, Aurora, CO.)

Atypical (Dysplastic) Nevus ICD10 code D48.5

Pathogenesis

The terminology surrounding atypical nevi is not standardized. Alternative nosology includes dysplastic nevi, Clark nevi, and nevi with cytologic atypia and architectural disorder. The pathogenesis of atypical nevi is poorly understood. It is likely that the development of atypical nevi involves a complex interaction of genetic factors and sunlight exposure. In about one-third of patients with familial atypical moles and melanoma syndrome (FAMMM syndrome), there are germline *CDKN2A* mutations. The pathogenesis of other forms of familial atypical nevi and sporadic atypical nevi is poorly established.

Clinical Features

- Atypical nevi usually appear first in adolescence or early adulthood.
- Atypical nevi may be solitary, few, or numerous (>200).
- The trunk is usually affected by atypical nevi, especially the back (Fig. 31.27). The chest, abdomen, and proximal extremities may also be involved. Sun-protected sites, such as the buttocks, often have fewer atypical nevi.
- Atypical nevi are usually larger than common banal nevi, with most of them being more than 5 mm in diameter (Figs. 31.28–31.30).
- Atypical nevi are highly variable in appearance. The same ABCDE criteria used to distinguish melanoma from banal nevi also characterize atypical nevi:
  - A—asymmetry
  - B—border irregularity
  - C—color variegation
  - D—diameter greater than 6 mm
  - E—evolutionary behavior (e.g., changing, itching)

Diagnosis

- Assessment of any particular nevus as clinically atypical is established by the physical examination.
- Familial atypical nevus syndromes are established through physical exam and queries regarding a personal and/or family history of melanoma. Melanoma in a first-degree relative (parent, sibling, child) is considered significant.
- Histologic assessement of an atypical nevus, and exclusion of melanoma, occurs by biopsy.

Treatment

- The treatment of atypical nevi is not standardized. In persons with numerous clinically atypical nevi, a dermatologist may biopsy only those with a history of change, or only those with an appearance considerably different from others (the “ugly duckling sign”). The biopsy technique used may vary based on the clinical situation.
- Patients with sporadic or familial atypical nevus syndromes need to be educated in self-examination and have a periodic skin exams with a health professional (usually every 6–12 months).
- The management of biopsy-proven atypical nevi with involved surgical margins is not standardized. Some dermatologists remove all atypical nevi completely, whereas others completely remove only those with moderate or severe degrees of atypia.
- Serial photographs and computerized mole mapping have been advocated, but the utility of these measures has been questioned by some. The techniques are also not standardized.

Prognosis

It has been estimated that the risk of an atypical nevus becoming a melanoma is about 1:10,000 per year. In patients with sporadic atypical nevi, there may be up to a 15-fold elevated lifetime increased risk of melanoma. In patients with FAMMM syndrome, the risk may be increased 200- to 1200-fold.

Fig. 31.27. Patient with familial atypical moles and melanoma syndrome demonstrating numerous atypical nevi on the back. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 31.28. Patient with multiple atypical nevi, with many of them being more than 6 mm. Some of the lesions are concerning for melanoma.

Fig. 31.29. Patient with an atypical nevus demonstrating asymmetric distribution of pigment. This lesion was removed and diagnosed as a "compound nevus with mild cytologic atypia and architectural disorder." (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 31.30. Patient with a severely atypical nevus that is large and asymmetric, with irregular contours, and multiple colors, including shades of brown, tan, and red. (From the Joanna Burch Collection, Aurora, CO.)

Lentigo Maligna ICD10 code D03 (site dependent)

Pathogenesis

Lentigo maligna, eponymously known as a *Hutchinson freckle*, is a form of melanoma in situ that is strongly associated with cumulative exposure to UV light. Some dermatopathologists eschew use of the term *lentigo maligna* and refer to all cases as melanoma in situ or melanoma in situ, lentigo maligna type (MIS-LM), simply to convey the seriousness of the diagnosis and avoid confusion with a solar lentigo, a benign condition. Epidemiologic evidence demonstrates that the incidence of MIS-LM is increasing.

Clinical Features

- MIS-LM occurs in late middle-aged and elderly patients (most patients are >60 years).
- MIS-LM occurs chiefly in light-skinned individuals with a strong history of outside work (e.g., farmers).
- MIS-LM usually occurs on the cheeks, followed by other areas of the head and neck, upper chest, forearms, and dorsal hands.
- Early MIS-LM appears as a small tan to brown to black macule that may be difficult to distinguish from a solar lentigo (Fig. 31.31).
- Typically, MIS-LM involves slow progressive enlargement of the macule, over years, with ever-increasing irregularities in margin (irregular or notched borders) and in color variegation (Figs. 31.32 and 31.33). Even black (Fig. 31.34), gray, or white (regression) colors may be present over time.
- It is not uncommon for MIS-LM to darken progressively over time, often with an asymmetric growth pattern also identified.

Diagnosis

- A progressively enlarging pigmented macule, with irregular pigment and an irregular margin, occurring on sun-exposed skin in an elderly patient suggests MIS-LM.
- It is important to remember that early MIS-LM may be difficult to distinguish from a solar lentigo, but, with time, and with serial examination, MIS-LM may become the so-called "ugly duckling" when compared to other solar lentigines.
- The presence of a papule or nodule in suspected MIS-LM should raise concern for invasion (lentigo maligna melanoma).
- The biopsy technique used to establish the diagnosis should vary based upon the clinical situation. In general, if there is concern for invasion, a large punch biopsy (encompassing all or most of the lesion) or an incision or excision should be performed. If the lesion is flat, a deeper shave biopsy might also be considered, especially if a large swath can be encaptured.

Treatment

- For biopsy-proven MIS-LM, the standard of care is complete surgical excision using 0.5- to 1-cm clinical margins. Removal by micrographically controlled (Mohs) surgery is also an option.
- Topical imiquimod has been used in case reports and small series, but generally this is used only in select situations, such as when the patient refuses surgery, surgery is not an option, or there are other reasons (e.g., age, infirmity).
- Select cases can be treated with cryotherapy for many of the same reasons that topical imiquimod might be employed, but this should be done only by physicians with expertise in the technique.

Clinical Course

It is speculated that MIS-LM usually demonstrates a prolonged radial growth phase, perhaps 10 to 20 years or longer, before becoming invasive. A definitive study will never be performed, but it has been estimated that perhaps 50% to 95% of cases will not become invasive in an elderly person's remaining lifetime. However, once extension into the dermis occurs, the prognosis is similar to other types of melanoma when adjusted for Breslow depth.

Fig. 31.31. Early tan-brown irregular pigmented macule on sun-damaged skin that was found to be a lentigo maligna by biopsy. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 31.32. Lentigo maligna at the scalp margin in severely sun-damaged skin. Note that the patient has numerous solar lentigines for comparison.

Fig. 31.33. Patient with lentigo maligna demonstrating several areas of spontaneous regression. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 31.34. Patient with a neglected lentigo maligna demonstrating a large size and variegation in color. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Are Tanning Beds Safe?

This question is impossible to assess with a randomized prospective trial. An epidemiologic study in the United Kingdom estimated that 370 of the 6000 melanomas seen each year could be attributed to tanning bed exposure. Thus, about 100 patients in the UK die every year due to tanning bed use. Although sun exposure likely remains a main contributory factor for melanoma, tanning bed use increases one's risk of melanoma.

Pathogenesis

Although it is not the most common form of skin cancer, melanoma accounts for 80% of skin cancer deaths. Missed melanoma is among the most common causes of malpractice litigation. The pathogenesis of melanoma is complex and incompletely characterized. Genetic and environmental influences likely play a role, with UV light being an important determinant. Studies have suggested that intermittent exposure to sunlight, and in particular severe (blistering) sunburns in childhood, are associated with melanoma. Most cases of melanoma are sporadic, but about 8% of patients with melanoma will have a first-degree relative with melanoma. The most important genes linked to familial melanoma are *CDKN2A*, *CDK4*, *POT1,* and *TERT.* Heritable mutations in *CDKN2A* are also involved in an increased risk for pancreatic cancer. Melanoma is seen with increased frequency in xeroderma pigmentosum and in patients with the hereditary breast cancer gene, *BRCA2*.

Who Gets Melanoma?

Risk factors for the development of melanoma include the following:

- History of frequent sunburns, particularly blistering sunburns
- History of sunburns as an infant or child
- Multiple nevi (the more nevi, the higher the risk)
- Personal history of atypical nevi
- Personal history of melanoma
- Family history of melanoma (may indicate familial atypical mole syndrome)
- Fair skin, freckling, and light hair
- Immunocompromised patients (less important than the aforementioned factors)

Clinical Features

- Melanoma can arise on normal skin or mucosa, on sun-exposed skin, or within benign nevi, congenital nevi, nevi spilus, blue nevi, or atypical nevi.
- In comparison to common nevi, melanomas are usually larger, with irregular borders, asymmetry, color variegation, and a history of growth or change.
- It is thought that early melanoma usually manifests with horizontal growth (Figs. 31.35 and 31.36), and later there is transition to invasive vertical growth (Figs. 31.37 and 31.38). However, some melanomas can begin with nodular or vertical growth from inception.
- Regression is often a feature of melanoma (see Fig. 31.37).
- Melanoma can present with ulceration and bleeding, papillomatous features (Fig. 31.39), or no visible pigment (amelanotic melanoma). Some melanomas may resemble a scar (desmoplastic melanoma).
- Melanomas can arise on acral surfaces (Fig. 31.40), beneath the nail plate (Fig. 31.41), in the oral cavity (Fig. 31.42), or in periocular or perianal locations. Although blacks are less likely to develop melanoma overall, when it does occur in these persons, it is usually located in the oral cavity, on acral skin, or beneath the nail plate.

Fig. 31.35. Patient with an early, superficial, spreading melanoma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 31.36. Patient with a superficial spreading melanoma, with an abnormal notch. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

ABCDEs of Melanoma

- ***A***symmetry
  When a line is drawn through the center of the lesion, the two halves are not symmetric.
- ***B***order irregularity
  Melanoma usually demonstrates an irregular or notched border.
- ***C***olor variegation
  Multiple colors, or great variations in shades, are a disconcerting finding.
- ***D***iameter
  Most (but not all) melanomas are more than 6 mm in diameter.
- ***E***volutionary behavior
  Changing lesions (e.g., changing colors and/or size, bleeding, itching) are a point of concern and should prompt more careful evaluation.

Diagnosis

- The ABCDEs of melanoma are useful for assessment by health care providers and by patients (see box).
- It is important to recognize that although the ABCDEs will help identify many melanomas, not all melanomas will be identified with these criteria. Moreover, the criteria overlap with those of atypical nevi.
- A useful diagnostic concept is the "ugly duckling sign." When examining the patient holistically, a melanoma may stand out as different from the patient's other nevi. This should prompt consideration of a biopsy.
- If a patient reports change in a melanocytic lesion, this should be taken seriously, and consideration of a biopsy should transpire.
- A shave, punch, or incisional biopsy does not adversely affect the metastatic potential of melanoma. If concern for melanoma is high, and if surgically feasible, the entirety of the pigmented lesion should be sampled. This affords the pathologist or dermatopathologist with the best opportunity to make an accurate diagnosis. Partial capture of a lesion by biopsy may make it difficult to stage a melanoma accurately.

Treatment

- Surgical excision of melanoma is the treatment of choice, and it is dependent on the depth of invasion. Whereas anatomic considerations sometimes affect surgery, typically the following margins are utilized:
  - Melanoma in situ—0.5- to 1.0-cm clinical margins should be employed.
  - Melanoma 1.0 mm or less in depth—a 1.0-cm clinical margin should be employed.
  - Melanoma 1.01 to 2.0 mm in depth—a 1- to 2-cm clinical margin should be employed.
  - Melanoma 2.0 mm or larger—a 2-cm clinical margin should be employed.
- Clinical and histologic features are used to stage melanoma patients according to American Joint Commission on Cancer (AJCC) guidelines. Staging information can be found at the American Cancer Society website: http://www.cancer.org/cancer/skincancer-melanoma/detailedguide/melanoma-skin-cancer-stages. New AJCC guidelines (8th edition) will take effect on January 1, 2018.
- Sentinel lymph node (SLN) biopsy has not yet been proven to afford a therapeutic advantage, but the procedure can provide important prognostic information. However, an SLN biopsy also carries normal surgical risks with it (e.g., complications of anesthesia, infection, lymphedema), so it is generally considered only in some situations:
  - Melanoma with a depth of invasion more than 1 mm but typically less than 4 mm,
  - Melanoma of 0.76 to 1.00 mm in depth, particularly if there are dermal mitotic figures (pT1b) or other concerning features.
  - Use of SLN biopsy may be affected by the new 8th edition of the AJCC, which will take effect January 1, 2018.
  - The MSLT-II trial, released in June 2017, indicated no survival advantage for complete lymph node detection in patients with an involved sentinel lymph node.

Clinical Course

The American Cancer Society has estimated that for 2017, there will be 87,110 new melanomas diagnosed, and about 9,730 people will die from melanoma (≈6380 men and 3350 women).

Fig. 31.37. Patient with a superficial spreading melanoma, with regression and an early nodule. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 31.38. Patient with a superficial spreading melanoma of the scalp that has developed a large nodular component. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 31.39. Patient with a superficial spreading melanoma with friable exophytic papillomatous nodule arising in patient with multiple atypical nevi. Note the presence of multiple colors.

Fig. 31.40. Patient with an acral lentiginous melanoma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 31.41. Patient with a subungual melanoma demonstrating pigmentation of the nail plate (Hutchinson sign), nail dystrophy, and extension onto the skin of the thumb. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 31.42. Fatal oral melanoma of the lip and buccal mucosa in a black patient. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Blue Nevus ICD10 code D22.9

Why Are Blue Nevi Blue?
Many have asked, "How does melanin, a brown pigment, create the distinct blue hue of a blue nevus?" The answer lies in the incoherent scattering, also called *Rayleigh scattering* or the *Tyndall effect*. The depositions of small agglomerations of melanin between collagen bundles in the dermis lead to incoherent scattering of reflected light, with production of definite blue hues from these dermal melanocytic processes, such as blue nevi. The sky and the ocean appear blue for similar reasons.

Clinical Features

- Blue nevi may be congenital or acquired.
- Acquired blue nevi usually appear in childhood or in early adulthood.
- Blue nevi are more common in women and in individuals with a darker skin type.
- Blue nevi are usually solitary but may be multiple.
- Blue nevi are most common on the dorsal hands and feet, followed by the face and trunk.
- Blue nevi present as a round to oval papule, nodule, or plaque, of varied size, with a blue to blue-black hue, although some variants may demonstrate shades of gray, brown, or white (Figs. 31.43–31.45).
- Cellular blue nevi are composed of more tightly apposed fusiform melanocytes with lesser melanin, whereas epithelioid blue nevi are composed of epithelioid-appearing melanocytes. The latter is seen in Carney complex, a disorder that also includes lentigines, atrial myxomas, and endocrinopathies.
- Clinical variants of blue nevi include agminated or eruptive blue nevi (Fig. 31.46), giant blue nevi, and targetoid blue nevi, targetoid lesions that alternate blue and white colors.

Diagnosis

- The clinical appearance of blue nevi is usually diagnostic, although the differential diagnosis can include a traumatic (graphite or carbon) tattoo, malignant melanoma, and pigmented basal cell carcinoma.
- Problematic lesions can be removed and/or biopsied with a punch or incisional/excisional biopsy to establish the diagnosis.

Treatment

- Blue nevi are benign, and no treatment is required when the diagnosis is rendered with confidence.
- Surgical removal using an appropriately sized punch or scalpel excision is possible, if desired. Shave biopsies are not advised because blue nevi are often deeply situated.

Clinical Course

Common blue nevi do not manifest an increased risk for malignant degeneration. However, cellular blue nevi may harbor an increased risk of malignant transformation, at least relative to common blue nevi. Thus, many dermatologists recommend that cellular blue nevi be excised with conservative surgical margins. Epithelioid blue nevi also likely possess an increased risk of melanoma, and some epithelioid blue nevi may overlap with so-called "pigmented epithelioid melanocytoma," a controversial entity considered by some to be a low-grade form of melanoma.

Fig. 31.43. Patient with a common blue nevus demonstrating a characteristic blue color. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 31.44. Patient with a common blue nevus, with shades of blue and black. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

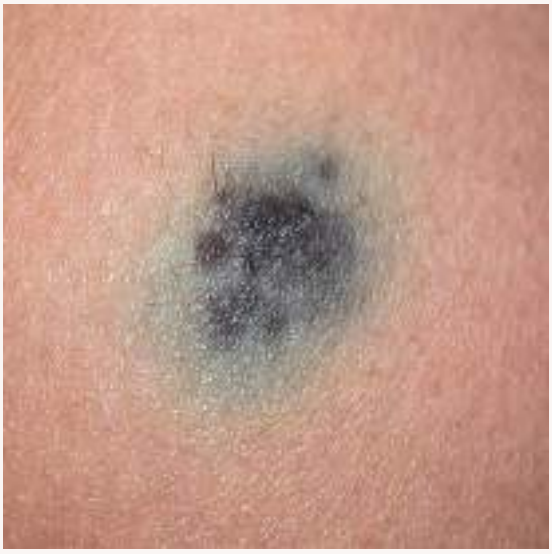

Fig. 31.45. Patient with a large speckled blue nevus, with shades of gray, blue, and black.

Fig. 31.46. Patient with an unusual case of eruptive blue nevi of the scalp and forehead. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 32
Vascular Tumors

Key Terms

Infantile (Juvenile) Hemangioma
Diffuse neonatal hemangiomatosis
Kasabach-Merritt Syndrome
Hemangioma thrombocytopenia syndrome
Hemangioma with thrombocytopenia
Pyogenic Granuloma
Lobular capillary hemangioma

Vascular tumors include all neoplasms that demonstrate endothelium-lined channels and contain red blood cells (erythrocytes). This chapter is organized so that congenital vascular lesions are discussed first, followed by benign acquired vascular lesions and, finally, malignant vascular tumors. Also included are superficial lymphangiomas with hemorrhage, which may be clinically confused with vascular tumors.

Differential Diagnosis of Vascular Tumors of the Skin

Common

- Cherry angiomas (most common)
- Pyogenic granulomas
- Spider angioma
- Venous lake

Uncommon

- Angiosarcoma
- Angiokeratoma
- Infantile hemangioma
- Kaposi sarcoma
- Port wine stain
- Vascular malformation

IMPORTANT HISTORY QUESTIONS

How long has this lesion(s) been present?

Vascular tumors may be congenital or acquired. This is an important distinction, because some vascular tumors tend to occur in younger individuals (e.g., pyogenic granuloma) and some occur in older adults (e.g., cherry angiomata). Similarly, in general, lesions that are present for many years are less likely to be malignant.

Has the lesion changed?

A history of change or growth can be important in suggesting a malignancy. For example, early angiosarcoma of the scalp might appear initially to be flat and difficult to distinguish from a port wine stain. However, history of recent and/or rapid growth may warrant a biopsy to exclude angiosarcoma.

Have you ever been treated with radiation?

Because angiosarcomas can occur in radiation ports, even years after treatment, this is an important historical factor to ascertain and consider.

IMPORTANT PHYSICAL FINDINGS

How many vascular lesions are present?

Some vascular neoplasms usually occur as multiple lesions on the body (e.g., cherry angiomata, angiokeratomata), whereas other vascular neoplasms usually occur as solitary lesions (e.g., pyogenic granuloma, angiosarcoma).

What is the distribution of the lesions?

Most vascular neoplasms have characteristic patterns of distribution. For example, cherry angiomata often occur on the trunk. Angiosarcoma usually occurs on the head and neck, or in past radiation fields. Pyogenic granulomas usually occur on mucosal surfaces and the digits.

Are the lesions macular or palpable?

Vascular lesions can be flat (e.g., macules, patches) or demonstrate an elevated character. For example, nevus flammeus nuchae (so-called stork bite) is usually macular, whereas pyogenic granulomas and cherry angiomata are nearly always palpable. Some vascular tumors evolve from a flat to a palpable lesion. For example, infantile and juvenile hemangiomas may be flat at birth but rapidly evolve into larger palpable vascular tumors. The presence or absence of ulceration is also an important physical finding.

Are the lesions pulsatile?

Some vascular tumors, such as spider angiomata and pyogenic granulomas, are pulsatile and may demonstrate a feeder vessel on diascopy. Sometimes, the pulsatile nature of a lesion is not evident until the biopsy is performed. For example, pyogenic granulomas may manifest with pulsatile and rapid arterial bleeding when a shave biopsy is performed.

Infantile (Juvenile) Hemangioma ICD10 code D18.0

Pathogenesis

The pathogenesis of infantile hemangioma (IH), also called juvenile hemangioma or strawberry hemangioma, is not well understood. Expression of placental vascular isotopes and an increased incidence of placental abnormalities in mothers of affected children suggest a causal relationship. Infantile hemangiomas usually manifest a period of rapid growth, followed by involution, often occurring over years. IH usually reaches maximum size after 3 to 6 months of growth. A general rule of thumb is that 30% of IH involute by age 3 years, 50% by 5 years, and 70% by 7 years.

Clinical Features

- IH may be present at birth or may appear during the neonatal period.
- IH may present first as telangiectasias, pink macules, or patches or bruise-like lesions. Early lesions can mimic a port wine stain (Fig. 32.1A). Rarely, neonates present with well-developed lesions.
- Well-developed IH manifests with a red lobulated appearance, likened to a strawberry (see Fig. 32.1B).
- Ulceration and hemorrhage can be identified in IH.
- Involution of IH manifests as decreasing size. A gray color may develop. Fully involuted IH can manifests as a white scar because telangiectasias or even atrophy may develop (Fig. 32.2).
- IH varies in size. Lesions may be singular or multiple.
- IH usually affects the skin and mucosa, but internal organs may be involved on occasion (e.g., liver, gastrointestinal tract, lungs).
- Patients with numerous cutaneous lesions (diffuse neonatal hemangiomatosis) are at increased risk for involvement of internal organs (Fig. 32.3).
- IH can obstruct or partially obstruct the oral cavity or respiratory tract, or it may impair vision.

Diagnosis

- Early IH (macular phase) may be difficult to distinguish from port wine stains. It is often the clinical course, with rapid growth, followed by involution, that best establishes the diagnosis of IH.
- A punch or incisional biopsy may be needed in cases that manifest in an unusual way.
- Diffuse neonatal hemangiomatosis can be life-threatening, with mortality rates of 29% to 80%. In this circumstance, ultrasonography, computed tomography (CT), or magnetic resonance imaging (MRI) may be used to evaluate for systemic disease.

Treatment

- Treatment of IH is controversial and depends on the site involved and degree of involvement. If possible, patients should be referred to an expert in congenital vascular lesions.
- Small IH are not often treated. When treatment is desired, flashlamp-pumped pulsed-dye laser, targeting the vasculature, may be used.
- Systemic therapies include intralesional or systemic corticosteroids, recombinant interferon-α, or, more recently, a beta blocker (e.g., propranolol). Systemic corticosteroids may be used in life-threatening or vision-threatening IHs. Since 2008, beta blockers, especially propranolol, have been used off-label as treatment of complicated IH. Use of this drug represents a major development in the area. However, this medication should be used by those with experience in treating pediatric patients.
- Surgical removal is generally limited to smaller and exophytic lesions amenable to extirpation.
- Kasabach-Merritt syndrome requires immediate hospitalization, but treatment is not standardized.

Fig. 32.1. A, Infantile hemangioma at the time of presentation. B, Fully evolved infantile hemangioma (same infant as seen in A), with partial ocular and nasal obstruction. (Both images from the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 32.2. Patient with an involuted infantile hemangioma, with residual telangiectasia, scar, and atrophy. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 32.3. Diffuse neonatal hemangiomatosis. The patient also had numerous lesions in the liver. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Kasabach-Merritt Syndrome ICD10 code D69.5

Pathogenesis

Kasabach-Merritt syndrome (KMS), occasionally referred to as *hemangioma with thrombocytopenia or hemangioma thrombocytopenia syndrome,* is a rare complication of hemangiomas in neonates and infants. Kaposiform hemangioendothelioma and tufted angioma are the two forms of vascular neoplasms usually associated with KMS. For unknown reasons, patients with KMS develop platelet trapping and a consumptive coagulopathy. Resultant bleeding problems can be life-threatening.

Clinical Features

- KMS usually presents at birth or in the neonatal or early infancy period. Almost all cases occur before 6 months of age.
- Patients with KMS typically have a large congenital vascular neoplasm.
- The vascular neoplasm often demonstrates an abrupt change in size, color, or firmness (Figs. 32.4 and 32.5).
- Affected infants often develop hemorrhage and bruising at sites away from the vascular neoplasm, which include the skin and internal organs.

Diagnosis

- The presentation of a large congenital vascular neoplasm with abrupt change suggests concern for KMS, and this concern is augmented by hemorrhage or bruising of skin away from the vascular neoplasm.
- A complete blood count (CBC), with attention paid to platelet count, is important. Clotting studies should be performed emergently because clotting factors (fibrinogen) are rapidly depleted.
- Imaging studies such as ultrasound, MRI, or CT should be considered to investigate hemorrhage beyond the skin.
- In select cases, a biopsy of the vascular tumor may be considered. Thrombosis in the vascular neoplasm supports the diagnosis.

Treatment

- Immediate admission to a pediatric intensive care unit (ICU), preferably at a tertiary children's facility, is important, because management often requires a multidisciplinary approach, and skilled pediatric nursing is preferred.
- The management of KMS is not standardized and is beyond the scope of this text. Typically, care is supportive and focuses on transfusions of fresh-frozen plasma and platelets. In select cases, treatment with anticoagulant and antithrombotic drugs may be used by experts.
- Surgical excision of the tumor may be curative, but urgent surgical extirpation is often made more difficult because of the bleeding diathesis. This must also be assessed by a pediatric surgeon on a case-by-case basis.

Clinical Course

KMS is a life-threatening emergency, with a mortality rate that approaches 30%.

Fig. 32.4. Thrombosed tufted angioma in a patient who developed Kasabach-Merritt syndrome. (From the William Weston Collection, Aurora, CO.)

Fig. 32.5. Thrombosed deep hemangioma in a neonate who developed Kasabach-Merritt syndrome.

Pyogenic Granuloma ICD10 code L98.0

Pathogenesis

Pyogenic granuloma, also known as *lobular capillary hemangioma,* is a common vascular neoplasm of unknown pathogenesis. Many cases occur at sites of trauma, and there is an increased incidence during pregnancy, suggesting a hormonal influence. Some drugs, such as oral retinoids, used in severe acne, may be associated with the development of pyogenic granulomas.

Clinical Features

- Pyogenic granulomas usually affect children, adolescents, and young adults.
- Pyogenic granulomas often evolve rapidly.
- Pyogenic granulomas are usually singular, but multiple lesions can develop.
- Although the distribution is highly variable, the face, fingers, lips, and gingivae represent common sites.
- Pyogenic granulomas may develop in preexisting hemangiomas or port wine stains.
- Pyogenic granulomas usually present as red to violaceous exophytic papules that may be pedunculated (Figs. 32.6–32.9).
- Pyogenic granulomas vary in size, but most lesions are about 5 mm in diameter.
- Secondary features of pyogenic granulomas may include ulceration, hemorrhage, and crusting.

Diagnosis

- The clinical presentation of a rapidly growing vascular lesion, often with episodic bleeding, is characteristic of pyogenic granulomas, and, in the right clinical setting, a diagnosis can often be made with confidence.
- In some cases, the differential diagnosis includes a traumatized or inflamed cherry angioma, Spitz nevus, early xanthogranuloma, Kaposi sarcoma, and another ulcerated cutaneous malignancy, such as basal cell carcinoma, squamous cell carcinoma, or melanoma. In these situations, a biopsy is recommended to facilitate a final diagnosis.
- Often, a shave biopsy can be used, but considerable bleeding may occur at the base. This is indicative of an arterial feeding vessel that may require electrocautery. A punch or excision biopsy may also be performed. In most cases, an unequivocal histologic diagnosis may be rendered.

Treatment

- Because pyogenic granulomas often bleed, ulcerate, and otherwise persist, treatment is generally recommended. One exception is a pyogenic granuloma associated with pregnancy, because often such lesions will resolve after delivery.
- A shave biopsy followed by electrodessication or cauterization of the base or use of a styptic agent (e.g., Monsel solution, silver nitrate stick) is the treatment most often used. Occasional patients may demonstrate recurrence, with one or even multiple lesions growing at the site of the original lesion.
- Removal by punch biopsy or conservative excision is often more time-consuming, but the recurrence rate is generally lower.
- Early and small pyogenic granulomas may respond to treatment with a pulsed dye laser that targets the vasculature, although multiple (two to six) treatments are necessary. Liquid nitrogen destruction may also be used with variable success.

Fig. 32.6. Patient with a bleeding pyogenic granuloma, with a positive Band-Aid sign.

Fig. 32.7. Patient with a classic pyogenic granuloma, with a typical collarette of keratin. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 32.8. Patient with an unusually exophytic pyogenic granuloma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 32.9. Patient with a pyogenic granuloma of the ocular mucosa. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Cherry Angioma (Hemangioma) ICD10 code D18.00

Pathogenesis

Cherry angiomas, also known as *Campbell De Morgan spots,* are ubiquitous lesions of uncertain cause. It is well recognized that cherry angiomas increase with age. More than 90% of all individuals will have one or more cherry hemangiomas by 70 years of age.

Clinical Features

- Cherry angiomas show no racial or sexual predilection.
- Cherry angiomas begin in late adolescence or early adulthood and continue to appear and/or enlarge until late older age, when the lesions may involute.
- Cherry angiomas may be solitary or numerous (>100).
- Most cherry angiomas are located on the trunk and proximal extremities, but the lesions may occur on any cutaneous surface except the palms and soles.
- Cherry angiomas present as 1- to 4-mm red to red-purple sessile or slightly pedunculated papules (Figs. 32.10 and 32.11).
- Diascopy may produce slight blanching, without pulsation, but complete blanching does not occur.
- Occasionally, cherry angiomas may become tender or change color due to thrombosis (Fig. 32.12).

Diagnosis

- The clinical presentation of cherry angiomas is usually diagnostic, although early lesions can resemble petechiae.
- Inflamed or traumatized cherry angiomas may be difficult to differentiate from pyogenic granulomas.
- In rare cases, a thrombosed cherry angioma may resemble a melanoma and will need to be biopsied.

Treatment

- Cherry angiomas are benign and require no treatment.
- Light electrodessication can be used to destroy lesions if symptomatic or if desired.
- Liquid nitrogen cryotherapy, or the use of another refrigerant spray, followed by curettage, is more effective than cryotherapy alone.
- Pulsed dye laser therapy targeting the vasculature is also effective.
- A superficial shave biopsy can be used for inflamed or traumatized lesions.

Clinical Course

Cherry angiomas continue to increase in number with age but do not have any malignant potential.

Fig. 32.10. Adult patient with multiple truncal cherry angiomas of different sizes.

Fig. 32.11. Close-up of a typical cherry angioma.

Fig. 32.12. Patient with a thrombosed cherry angioma that could be mistaken for melanoma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Venous Lake ICD10 code D18.01

Pathogenesis

A venous lake, less often referred to as a *venous varix,* is most likely due to aging and weakening of the supporting structures of blood vessels, leading to dilation. Venous lakes are most prevalent on heavily sun-damaged skin, suggesting that ultraviolet light–induced stromal changes are important.

Clinical Features

- Venous lakes often affect older adults with dermatoheliosis.
- Venous lakes are often solitary, but multiple lesions can occur.
- Venous lakes occur on the sun-damaged skin of the head and neck, including the ears and lips, particularly the lower lip.
- Venous lakes present as soft, compressible, dark blue to purple papules of 1 to 4 mm in size (Fig. 32.13).
- Venous lakes will often largely disappear with compression, slowly filling back to their original size over several seconds.
- Venous lakes may occasionally be firm due to thrombosis (Fig. 32.14).

Diagnosis

- The presentation and clinical appearance are often diagnostic. Occasionally, venous lakes may be confused with blue nevi, but, in this situation, palpation is useful. Blue nevi are firm and do not blanch with compression.
- Rare cases may require a deep shave or punch biopsy for diagnosis. The histologic findings of a dilated and telangiectatic blood vessel, with a thin and unremarkable endothelium and surrounding solar damage, are diagnostic.

Treatment

- Venous lakes are entirely benign and require no treatment.
- If desired, for cosmetic reasons, a venous lake can be removed by a deep shave or punch biopsy or removed if the lesion has caused recurrent bleeding.
- Less often, electrocautery, carbon dioxide laser, tunable dye laser therapy, and other lasers may be used in treatment.

Clinical Course

Venous lakes do not have any malignant potential.

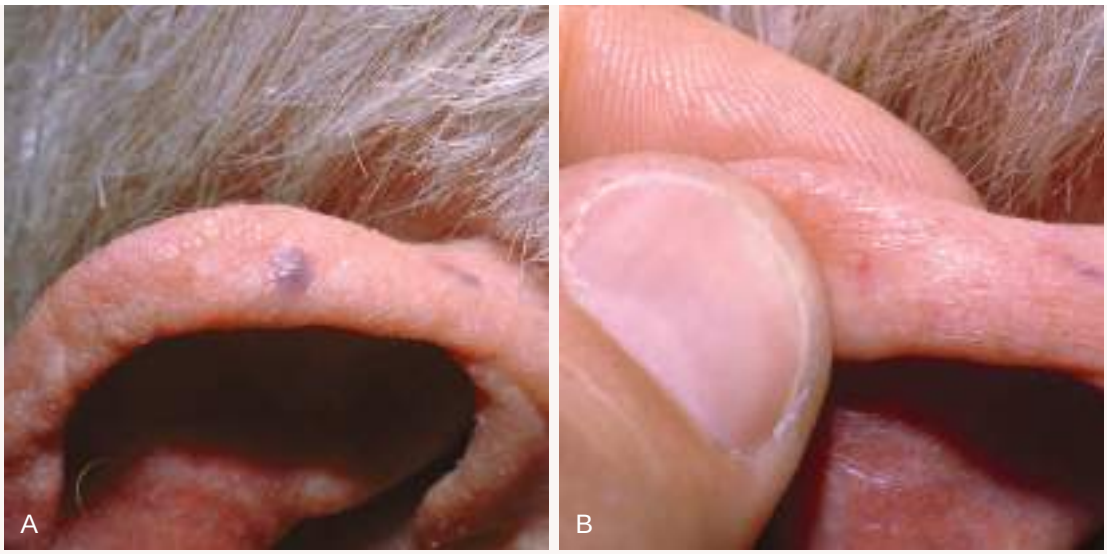

Fig. 32.13 A, Venous lake of the ear on sun-damaged skin. B, Compression produces collapsed venous lakes. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 32.14. Patient with a thrombosed venous lake of the lip. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Superficial Lymphangioma ICD10 code D18.1

Pathogenesis

Lymphangiomas are congenital malformations of lymphatics that may develop anywhere on the skin. It is common to divide lymphangiomas into superficial forms (e.g., lymphangioma circumscriptum) and deep forms (e.g., cystic hygroma, cavernous lymphangioma). Mixed vascular and lymphatic components can exist in a single lesion. Although cutaneous lymphangiomas may clinically appear superficial in nature, often at the microscopic level, the processes may connect to deeper lymphatic and vascular channels.

Clinical Features

- Superficial lymphangiomas are usually present at birth but may not be noticed until childhood or adolescence.
- Superficial lymphangiomas usually affect the neck, upper trunk, and proximal extremities.
- The primary lesion exists as grouped, clear papules, 1 to 3 mm in size, which appear to sit on the surface of the skin and are likened to frog spawn (Fig. 32.15).
- Superficial lymphangiomas can overlie deep cavernous lymphangiomas.
- Most lymphangiomas demonstrate focal hemorrhage into the lymphatic papules and thus resemble a vascular neoplasm (Figs. 32.16–32.18). In some cases, this can suddenly occur, yielding concern by the patient or the parent of a child.

Diagnosis

- Grouped superficial clear papules, present for years and resembling frog spawn on the skin, is generally diagnostic, and a biopsy is not typically required.
- A small clear papule may also be punctured with a no. 11 scalpel blade, and the contents should drain clear watery fluid consistent with lymph.
- Cases with extensive hemorrhage or focal thrombosis may be diagnostically challenging, and a 3- or 4-mm punch biopsy may be performed to clarify the situation.

Treatment

- Cutaneous lymphangiomas are benign lesions, and no treatment is required.
- Surgical treatment of superficial lymphangiomas is often imperfect because a connection to deeper lymphatic structures and superficial surgical modalities may result in recurrence.
- Wider and deeper surgical margins to contend with these connections may result in a significant scar or other surgical sequelae. Moreover, recurrences can still transpire.
- Select superficial lymphangiomas may respond to hypertonic saline injections into the dilated superficial lymphangiomas. This should only be done by individuals with experience in this treatment modality.

Fig. 32.15. Patient with a superficial lymphangioma resembling frog spawn. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 32.16. Patient with a superficial lymphangioma with focal thrombosis. The clear yellowish liquid is lymph.

Fig. 32.17. Patient with a superficial lymphangioma with hemorrhage resembling a vascular neoplasm. Note several residual clear papules that are the clinical clue to the diagnosis.

Fig. 32.18. Patient with a large superficial lymphangioma, with hemorrhage and thrombosis. Note the telltale clear papules. (From the William Weston Collection, Aurora, CO.)

Kaposi Sarcoma ICD10 code C46.9

Pathogenesis

Kaposi sarcoma (KS) is a condition caused by infection of endothelial cells with human herpesvirus 8 (HHV-8) (Fig. 32.19). Although the condition is technically a malignancy, in immunocompetent persons ("classic" Kaposi sarcoma) the disease usually has an indolent course. In immunocompromised persons (e.g., AIDS patients, transplant patients) KS can have a more aggressive course.

Clinical Features

- Historically, KS occurred in older persons of Mediterranean or Jewish ancestry ("classic" KS). More recently, aggressive forms were observed in immunosuppressed persons, particularly in AIDS patients.
- Classic KS often involves the lower extremities. In immunocompromised persons, the trunk or face may be involved, or even the oral mucosa.
- Early KS presents as round to oval red to violaceous macules ("patch stage" KS).
- Some lesions progress to red-blue or violaceous plaques or tumors (Fig. 32.20).
- In advanced disease, exophytic KS lesions may develop, and ulceration may transpire (Fig. 32.21).
- Patients with extensive disease of the lower extremities can develop lymphedema.
- The oral mucosa is involved in 30% of cases, with the hard palate usually affected (Fig. 32.22).
- Internal organs are involved in about 10% of cases, with lymph nodes and the gastrointestinal tract usually being affected.

Diagnosis

- KS is always in the differential diagnosis of patients with multiple unexplained violaceous macules, papules, nodules, or tumors.
- The diagnosis of KS is established via a punch biopsy or incisional biopsy. The histologic findings of early patch stage lesions can be problematic, but immunohistochemical staining for HHV-8 can be performed, which facilitates the diagnosis in many cases.

Treatment

- Patients are often referred to a tertiary care center or other specialists because treatment is not standardized.
- In HIV-infected persons, antiretroviral therapy is a cornerstone of care and may produce partial or complete remission.
- In transplant patients, the degree of immunosuppression can be reduced, clearly in cooperation with the transplant team.
- In patients with "classic" KS (older patients), usually radiation therapy or excision is used.
- Various single-agent regimens (vinblastine is most often used) or combined chemotherapeutic agent regimens are used, with varied success.
- Intralesional vincristine, vinblastine, and interleukin-2 (IL-2) can be used to manage singular lesions.
- Alitretinoin 0.1% topical gel (applied bid to qid) is U.S. Food and Drug Administration (FDA)-approved for the treatment of KS; in some series, a 36% response rate was demonstrated.

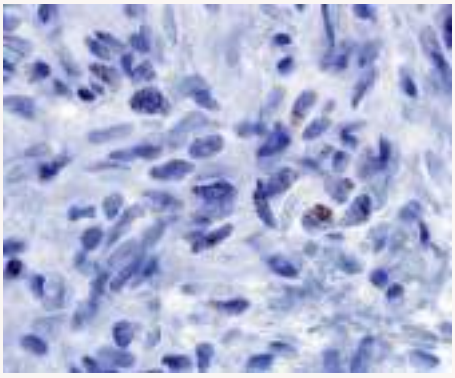

Fig. 32.19. Kaposi sarcoma demonstrating human herpesvirus 8 brown particulates in the nuclei by immunoperoxidase (100×).

Fig. 32.20. Patch, plaque, and early tumor stage Kaposi sarcoma on the forearm in an HIV-infected individual. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 32.21. Ulcerated tumor stage Kaposi sarcoma arising in a plaque stage lesion.

Fig. 32.22. Kaposi sarcoma of the hard palate in an HIV-infected man.

Angiosarcoma ICD10 code C44 (site dependent)

Pathogenesis

Angiosarcoma (AS) is a malignant vascular tumor derived from endothelial cells. Although its cause is not fully understood, chronic lymphedema and radiation therapy are implicated in some cases.

Clinical Features

- Angiosarcoma may occur anywhere, including organ systems other than the skin. Cutaneous angiosarcoma typically presents in one of three clinical situations:
  - Scalp-face AS (Figs. 32.23 and 32.24) is most common in geriatric patients.
  - Radiation-associated AS (Fig. 32.25) occurs in the field of prior radiation therapy.
  - Lymphedema-associated KS (Stewart-Treves syndrome; Fig. 32.26) occurs on the extremities of persons with chronic lymphedema, such as that occurring in the arm after axillary lymph node dissection for breast carcinoma.
- The earliest lesion of AS appears as a red or purple bruise-like macule or patch that progressively enlarges. There is often an ill-defined margin that merges with adjacent normal skin.
- As the condition worsens, red, purple, or even skin-colored papules, nodules, and tumors may develop.
- Advanced lesions of AS frequently bleed or ulcerate.

Diagnosis

- The diagnosis of AS requires a high index of suspicion, and early lesions may be misinterpreted as a bruise or benign vascular condition. AS should be suspected in any older patient, particularly someone with a history of radiation and/or chronic lymphedema and a new, vascular-appearing lesion.
- The diagnosis of AS must be established by biopsy. Usually, a large and deep punch or incisional biopsy, to include subcutaneous fat, is recommended. It must be understood that AS may be difficult or impossible to diagnose on superficial biopsies because the vascular changes in the shallow dermis may be subtle. When AS is a serious clinical consideration, a shave biopsy should not be performed.

Treatment

- If surgery is possible, excision with generous margins is the treatment of choice. AS is notoriously difficult to excise because the margins are difficult to determine, clinically and histologically. Micrographically controlled surgery (Mohs surgery) has no role in the management of AS.
- In large lesions that are not amenable to surgery, or in the case of recurrence after surgery, usually radiation therapy is employed. Radiation therapy may also be used in conjunction with surgery.
- Chemotherapy, primarily doxorubicin, has been used with limited success.

Clinical Course

Angiosarcomas are aggressive soft tissue tumors, with multiple series reporting a 5-year survival rate of 12% to 33%. Most persons with AS die within 9 to 12 months of diagnosis.

Fig. 32.23. Patient with a fatal, large, ulcerated angiosarcoma of the posterior scalp. Punch biopsy sites are marked for tumor mapping.

Fig. 32.24. Close-up of angiosarcoma of the scalp. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 32.25. Patient with an ulcerated angiosarcoma of the lower abdomen at the site of radiation. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 32.26. Patient with an angiosarcoma arising in a lymphedematous leg. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 33
Yellow Lesions

Key Terms

Xanthelasma
- Xanthelasma palpebrarum

Nevus Sebaceus
- Nevus syndrome
- Organoid nevus

Yellow lesions of various shades—yellow, yellow-white, yellow-orange, yellow-red—include an admixture of neoplastic and inflammatory skin disorders. Usually, yellow tints are due to the accumulation of lipid or elastic fibers.

IMPORTANT HISTORY QUESTIONS

How long has the lesion(s) been present?

This question is important because some of disorders in this group, such as xanthogranulomas, tend to be stable over time, whereas other conditions, such as eruptive xanthomas, are more likely to have an explosive onset. Nevus sebaceus is often present at birth, but it then becomes rather quiescent until puberty.

Has the lesion changed?

This question is important because some malignant lesions, including sebaceous gland carcinomas and a small subset of atypical fibroxanthomas (a low-grade malignancy) may also demonstrate a yellow color or yellow hue.

Do you have any known medical problems?

This query is important because some conditions, such as eruptive xanthomas, are associated with uncontrolled diabetes and primary biliary cirrhosis.

Have you or any member of your family had cancer?

Patients with numerous sebaceous gland neoplasms could suffer from Muir-Torre syndrome. This is a heritable condition that predisposes a person to gastrointestinal (GI) and renal cancers. In patients with planar xanthoma, a history of a lymphoid or myeloid malignancy, particularly multiple myeloma, would be important.

Do you take any medications?

Some medications, such as retinoids or corticosteroids, can aggravate or precipitate eruptive xanthomas.

IMPORTANT PHYSICAL FINDINGS

How old is the patient?

Nevus sebaceous can be seen in the neonatal period, but then the condition becomes largely quiescent until puberty. Xanthogranulomas are most often seen in young children. However, most other yellow skin lesions develop during adulthood.

How many lesions are present?

This is a critical finding because metabolic disorders, such as eruptive xanthomas, are characterized by numerous lesions, whereas other neoplastic disorders, such as xanthogranulomas, are typically solitary.

What is the distribution of the lesions?

Many disorders discussed in this chapter have characteristic locations. For example, tuberous xanthomas have a marked predilection for the elbows and knees, whereas xanthelasma, by definition, involves the eyelids. Sebaceous gland carcinoma also frequently involves the eyelid margin.

If multiple lesions are present, is there evidence of a Koebner phenomenon?

Only eruptive xanthomas are characterized by yellow lesions that appear with Koebner phenomena, occurring at sites of skin trauma, often in lines.

Differential Diagnosis of Yellow Lesions

Metabolic
- Eruptive xanthoma
- Normolipemic plane xanthoma
- Tuberous xanthoma
- Verruciform xanthoma
- Xanthelasma
- Xanthoma striatum

Neoplastic
- Sebaceous gland hyperplasia
- Sebaceoma
- Sebaceous adenoma
- Sebaceous gland carcinoma
- Xanthogranuloma

Hamartomatous
- Nevus sebaceous

Eruptive Xanthomata ICD10 code E78.2

Pathogenesis

Eruptive xanthomas are caused by an abrupt accumulation of low-density lipids, chiefly triglycerides, in the dermis (Fig. 33.1). Eruptive xanthomas are seen in many hyperlipidemia syndromes, but the most common cause is uncontrolled or poorly controlled diabetes mellitus. Depressed insulin levels result in decreased lipoprotein lipase activity, and elevated blood glucose levels lead to elevated very-low-density lipoprotein (VLDL) levels. The net result is hypertriglyceridemia, which can lead to eruptive xanthomas in the skin. Eruptive xanthomas may also be precipitated by alcohol, oral retinoids, corticosteroids, and estrogens.

Clinical Features

- Eruptive xanthomas typically appear as numerous lesions, sometimes more than 100.
- Early lesions demonstrate variable erythema and can be pruritic or even tender.
- Lesions are often located on the extremities and buttocks but may appear on any cutaneous surface, including mucocutaneous junctions, such as the eyelid margins and near the vermillion border of the lips.
- Lesions are strikingly uniform papules, which may be folliculocentric, and are typically 2 to 5 mm in size. Color varies from red (Fig. 33.2) to yellow-red (Fig. 33.3) to yellow-orange (Fig. 33.4) to yellow.
- The Koebner phenomenon may be present in areas of superficial trauma (see Fig. 33.3).
- Patients who present with eruptive xanthomata are also at risk for acute pancreatitis due to elevated triglyceride levels.

Diagnosis

- A careful clinical history, including medications and a review of systems (history of diabetes), is usually diagnostic when the clinical presentation is also supportive.
- At a minimum, all patients should have a complete serum lipid profile (Fig. 33.5), blood glucose level, routine chemistries, and pancreatic enzymes studies performed.
- A 3- or 4-mm punch biopsy can be done in problematic cases. The histologic findings can be specific or consistent with eruptive xanthoma.

Treatment

- Treatment focuses on the management of the underlying hyperlipidemia through diet, exercise, and lipid-lowering drugs (e.g., fibrates, statins, niacin).
- Remove any potentially complicating or contributing drugs, including alcohol.
- There is no specific treatment of the skin lesions.

Clinical Course

Eruptive xanthomas usually resolve spontaneously, over a period of 2 to 4 weeks. In most cases, there are no residual sequelae, but occasional cases may result in focal but permanent atrophy.

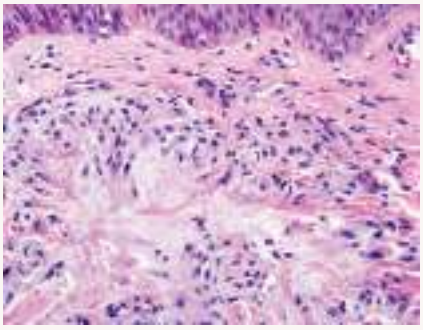

Fig. 33.1. Biopsy of eruptive xanthoma demonstrating free dermal lipid surrounded by lipid-laden macrophages (H&E stain; 200×).

Fig. 33.2. Patient with uniform red papules on the buttocks, a common site for eruptive xanthomata. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 33.3. Patient with eruptive xanthomas of the calf demonstrating the Koebner phenomenon. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 33.4. Patient with characteristic yellow-orange papular lesions of eruptive xanthomata, with some being folliculocentric. The white color is due to application of cantharidin in the emergency room for what was thought to have been warts.

Fig. 33.5. Blood from a patient with eruptive xanthomata. The blood was placed in the refrigerator to accelerate separation of the lipids. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Xanthelasma ICD10 code H02.6

Pathogenesis

Xanthelasma, also known as *xanthelasma palpebrarum*, is the most common type of xanthoma. It is estimated to occur in 1.1% of women and 0.3% of men. The pathogenesis of xanthelasma is not entirely understood. Although some patients have type II hypercholesterolemia or type III dysbetalipoproteinemia, many patients have elevated levels of cholesterol, triglycerides, and VLDL and lower levels of high-density lipoprotein (HDL) when compared to normal individuals. Similar lesions can also be seen in diffuse, normolipemic, plane xanthoma (see next section).

Clinical Features

- Xanthelasma is more common in women.
- Typically, the condition appears first in middle-aged adults.
- The condition may be unilateral or bilateral and may affect the upper eyelid, lower eyelid, or both.
- The lesions present as flat, soft, yellow-white or yellow papules or small plaques of varied size (Figs. 33.6 and 33.7) on the periocular skin.

Diagnosis

- The clinical appearance, when combined with the characteristic location, is usually diagnostic.
- A serum lipid profile should be determined in all patients because patients with xanthelasma and lipid abnormalities are more likely to develop atherosclerotic disease. Often no lipid abnormality is detected.
- A shave or snip skin biopsy can be performed in problematic cases. The presence of a superficial band of lipid-laden macrophages (lipophages) is a pattern usually seen in planar xanthomas and xanthelasma.

Treatment

- The treatment of choice is management of the lipid abnormality, if one is present. Usually lipid-lowering drugs, such as statins (atorvastatin) and niacin, are employed. Often, however, no lipid disorder is apparent.
- Surgical removal of small lesions can be accomplished by elevation with tweezers and snipping of the lesion with sharp curved surgical scissors. Larger lesions can be excised and sutured closed.
- Topical ablative therapy includes 70% trichloroacetic acid, left on for 30 to 60 seconds and then neutralized with alcohol. This yields a good or excellent result in about 80% of patients, with some patients requiring a second treatment. Care around the eye is requisite.
- Other options include laser ablation. Various carbon dioxide lasers, Nd:YAG lasers, or potassium titanyl phosphate (KTP) lasers have been used with success. Lasers have replaced older methods of ablative therapy, such as electrofulguration and cryosurgery, which yielded mixed and unpredictable cosmetic results.

Clinical Course

Untreated, xanthelasma may persist indefinitely. Management of lipid levels with drugs, although important to systemic health, does not typically affect xanthelasma. Lesions that are surgically removed or ablated, using any modality, can recur.

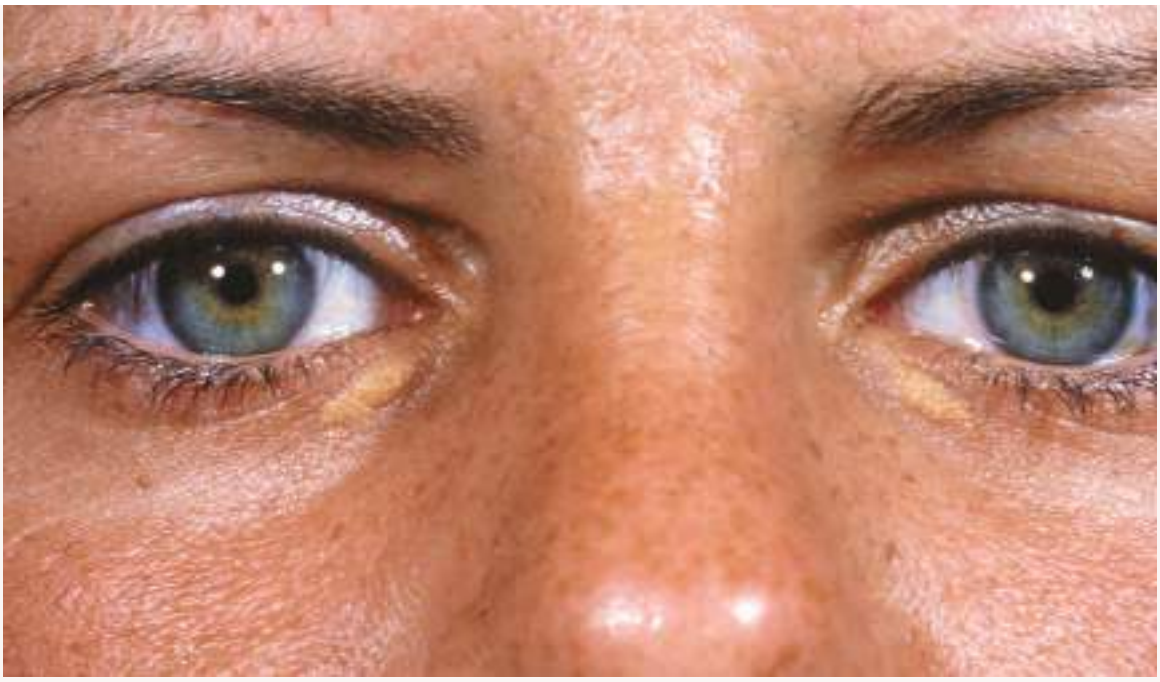

Fig. 33.6. Patient with a bilateral xanthelasma of the lower eyelids demonstrating a characteristic oval yellow-white color.

Fig. 33.7. Patient with a typical xanthelasma located on the upper eyelid.

(Juvenile) Xanthogranuloma ICD10 code D76.3

Pathogenesis

The pathogenesis of xanthogranulomas (XGs), referred to as juvenile xanthogranulomas in children, is poorly understood. Histologically, the lesions are comprised of macrophages, xanthomatous cells (macrophages containing lipid), multinucleated histiocytes with lipid at the periphery (Touton giant cells), and scattered lymphocytes and eosinophils. The increased incidence of xanthogranulomas in children with neurofibromatosis suggests a genetic basis. Despite the accumulation of lipid in tissue macrophages (xanthomatous cells) of the lesions, serum lipid studies are invariably normal.

Clinical Features

- Xanthogranulomas usually are seen in infants and children, although they may occur at any age.
- The lesions are usually solitary but can be multiple.
- The primary lesion is usually a red to yellow-red to orange-red papule, without scale (Figs. 33.8 and 33.9). Some lesions may have negligible scale (Fig. 33.10).
- In general, newer lesions appear redder and may resemble a pyogenic granuloma or other vascular lesion (Fig. 33.11).
- Less often, the lesions are larger and may appear as nodules or tumors.
- Ocular xanthogranulomas may also be present in about 0.4% of cases. Complications of ocular XG may include glaucoma, hyphema, and blindness.
- Less often, xanthogranulomas may be present in other organs, including the lung, liver, and pericardium.

Diagnosis

- The clinical presentation of a solitary (or multiple) yellow, yellow-red, yellow-orange, or yellow-brown papule(s) in a child is suspicious for a xanthogranuloma. In most cases. the diagnosis is based solely on the clinical appearance and presentation.
- A shave or punch biopsy is nearly always diagnostic because of the characteristic agglomeration of various cell types and increased lipid in macrophages.

Treatment

- Because xanthogranulomas usually resolve spontaneously over time, no treatment is required.
- An ophthalmic examination may be performed to detect ocular lesions, particularly in infants 2 years old or younger.
- Patients with xanthogranulomas and café au lait macules should have a complete blood count (CBC) performed to exclude myelogenous leukemia because there is a reported association.

Clinical Course

In children, most cases spontaneously resolve within 5 years. Occasionally, lesions will persist into adulthood, or will even first develop in adulthood.

Fig. 33.8. Patient with a typical yellow papular xanthogranuloma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 33.9. Close-up of a xanthogranuloma demonstrating a yellowish-orange color.

Fig. 33.10. Close-up of a scaly xanthogranuloma with an admixture of red and orange hues. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 33.11. Xanthogranuloma of the axilla in a child that is red, with subtle brownish and orange tints. Xanthogranulomas in which red is the predominant color can be impossible to differentiate from vascular lesions. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Sebaceous Gland Hyperplasia ICD10 code L73.9

Pathogenesis

Sebaceous gland hyperplasia (SGH), also known simply as *sebaceous hyperplasia,* is a benign sebaceous gland neoplasm. It is the most common sebaceous neoplasm. Histologically, SGH is characterized by a central follicular opening, surrounded by enlarged sebaceous glands composed of peripheral basaloid germinative cells and central sebocytes. The pathogenesis is not well understood, but there have been reported examples of familial SGH, supporting a genetic basis.

Clinical Features

- SGH can occur at any age after puberty, but the condition becomes more common in the fourth decade of life and, by the eighth decade, about 25% of individuals have SGH.
- SGH is most common on the face (>90%), followed by the trunk.
- SGH may be solitary or numerous.
- The typical lesion is a yellowish-white to yellow papule, 2–5 mm in size, with central depression (Figs. 33.12 and 33.13).
- Rare variants of giant SGH, which may reach up to 5 cm in diameter, have been reported.
- SGH may be associated with Muir-Torre syndrome, but there are so many cases of SGH unassociated with this syndrome that a detailed workup for Muir-Torre is not encouraged for SGH alone.

Diagnosis

- The diagnosis of SGH is usually made based on the clinical appearance of a yellow or yellow-white papule, located on the face, with a central dell that corresponds to the follicular opening.
- Some cases may resemble basal cell carcinoma, with a rolled border. A shave biopsy is diagnostic.

Treatment

- No treatment is necessary; any treatment performed will be for cosmesis.
- Surgical options include a shave biopsy or punch biopsy for removal.
- Destructive topical treatment options include bichloroacetic acid and trichloroacetic acid.
- Other ablative therapeutic options include photodynamic therapy, laser destruction (e.g., carbon dioxide laser, argon laser, pulsed dye laser), cryosurgery, and electrofulguration.

Clinical Course

Individual lesions of SGH will persist indefinitely and may continue to enlarge slowly over time.

Muir-Torre Syndrome

Muir-Torre syndrome is the result of mutations in the mismatch repair genes *MLH1, MSH2,* and *MSH6* or, rarely, *PMS*. It is inherited in an autosomal fashion, with about 20% of cases being the result of sporadic mutations. Persons with this syndrome manifest a variety of sebaceous neoplasms, including SGH, sebaceous adenomas, sebaceomas, sebaceous gland carcinoma, and internal malignancies. Less often, patients with Muir-Torre syndrome may also have keratoacanthomas. The most common internal malignancies associated with Muir-Torre syndrome are colorectal carcinomas, genitourinary malignancies, and breast carcinomas.

Fig. 33.12. Patient with numerous sebaceous gland hyperplasia neoplasms of the forehead demonstrating characteristic central dells. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 33.13. Sebaceous gland hyperplasia. Shown is a close-up of a typical yellow papule with a central dell.

Nevus Sebaceus ICD10 code Q85.9

Pathogenesis

Nevus sebaceus (of Jadassohn), also known as *organoid nevus*, is a common hamartomatous malformation of unknown cause. As a hamartoma, the normal structures of the skin (epidermis, dermis, hair, sweat glands, and sebaceous glands) are present but with abnormal hypertrophy, hyperplasia, and organization. Nevus sebaceus (NS) occurs sporadically; the condition is found in about 0.3% of the population. Histologically, NS is composed of an acanthotic epidermis with papillomatosis, with abnormal and disorderly growth of the sebaceous glands, hair follicles, eccrine sweat glands, and apocrine sweat glands.

Clinical Features

- NS affects all ethnic backgrounds with equal frequency. Men and women are equally affected.
- Most NS occurs on the scalp (~50%), followed by the face (~40%) and neck (~6%), but NS can occur just about anywhere on the body.
- Typically, NS proceeds through three stages:
  - Neonatal phase—presents as a patch of hair loss that is often linear. Because of maternal hormones, the lesions are often indurated, variably papillomatous, and yellowish in color because of the hypertrophy of the sebaceous glands (Figs. 33.14 and 33.15).
  - Childhood phase—maternal hormone levels diminish, the sebaceous gland component involutes, and the lesion flattens, leaving a linear patch of hair loss with a slightly yellow color.
  - Adolescent and adult phase—as the androgen levels rise after puberty, the sebaceous glands again accumulate lipid, and the lesions become more yellow and papillomatous (Fig. 33.16).
- Patients with large and extensive NS may have **epidermal nevus syndrome**, which includes seizures, mental retardation, various structural abnormalities, and ophthalmologic abnormalities (see Fig. 33.15).
- A complication of NS that occurs in later life is the development of a secondary neoplasia, such as basal cell carcinoma, within the lesion. The lifetime risk for the development of secondary neoplasms in NS is probably less than 10%, but some dermatologists prefer complete removal for this reason.

Diagnosis

- The diagnosis of NS is usually made based on the congenital nature of the lesion, history, anatomic location, and clinical appearance.
- Occasional cases of NS may be difficult to distinguish from simple epidermal nevi. In problematic cases, a punch biopsy or incision biopsy should be performed. Histologic examination is usually diagnostic. Shave biopsies are rarely diagnostic and are discouraged.

Treatment

- Serial surveillance is an option unless there is a history of recent growth in the lesion. If there is concern for a secondary malignant neoplasm in the lesion, biopsy and/or removal are necessary.
- Surgical excision is the consensus treatment of choice if the lesion is concerning or if the patient chooses this, but the timing of any excision procedure is controversial and is not standardized.

Clinical Course

Numerous secondary neoplasms have been reported to occur in NS, including syringocystadenoma papilliferum (benign sweat gland tumor), trichoblastoma (benign hair follicle tumor), trichilemmoma (benign hair follicle tumor), and sebaceoma (benign sebaceous gland tumor). A relatively recent 18-year review in Detroit found basal cell carcinoma arose in about 1% of excised cases. The true incidence of basal cell carcinoma in NS is difficult to estimate because many cases in the literature probably represent benign trichoblastomas that are histologically similar to basal cell carcinoma.

Fig. 33.14. Remarkably papillomatous nevus sebaceus with focal hemorrhage sebaceus in a neonate. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 33.15. Extensive nevus sebaceus of the scalp and face. This infant is at risk for epidermal nevus syndrome. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 33.16. Linear patch of alopecia in an adolescent caused by nevus sebaceus that has become subtly papillomatous and increasingly yellow after puberty. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 34
Cysts and Sinuses

Key Terms

Epidermoid Cyst
- Epidermal inclusion cyst
- Milium
- Ruptured epidermoid cysts

Apocrine Cystadenoma
- Apocrine hidrocystomas

Cutaneous Odontogenic Sinus Tract
- Cutaneous dental sinus tract
- Dentocutaneous sinus tract

True cysts of the skin represent epithelium-lined structures and may be caused by epidermis driven into the dermis (e.g., epidermal inclusion cysts), or they can arise from a variety of normal skin structures, such as hair follicles (e.g., epidermoid cysts, trichilemmal cysts), sebaceous duct (e.g., steatocystomas), apocrine glands and ducts (e.g., apocrine cystadenoma), and eccrine glands and ducts (e.g., eccrine hidrocystoma). Cutaneous sinuses represent epithelium-lined channels that communicate with a deeper process, such as a dental abscess. Finally, there are cyst-like structures of the skin that are not lined by an epithelium but arise from deeper structures, such as tendon-sheath (ganglion) and joint spaces (digital mucous cyst).

Differential Diagnosis of Cystic Lesions of the Skin

Common
- Epidermoid cyst (most common)
- Trichilemmal (pilar) cyst
- Apocrine cystadenoma
- Digital mucous cyst

Uncommon or Rare
- Cutaneous ciliated cyst
- Dermoid cyst
- Eccrine hidrocystoma
- Epidermal inclusion cysts
- Eruptive vellus hair cysts
- Median raphe cyst
- Steatocystoma

IMPORTANT HISTORY QUESTIONS

How long has the lesion(s) been present?

Most cystic structures of the skin are acquired, but dermoid cysts are congenital. Therefore questioning is important when evaluating a potential cyst around the eyes or posterior axial skeleton of a child, because congenital lesions in these areas may connect to deeper structures and are often not amenable to outpatient surgery.

Has the lesion changed?

Malignant tumors may be indistinguishable from cysts, and malignancy may arise in long-standing cysts; thus, change is important to identify. On rare occasion, a squamous cell carcinoma may even develop in common epidermoid cysts, so any change in behavior is a noteworthy event.

IMPORTANT PHYSICAL FINDINGS

How are the lesion(s) distributed?

Some cysts have characteristic locations. For example, trichilemmal cysts are most common on the scalp, whereas apocrine cystadenomas are most common on the eyelid margins.

How many lesions are there?

Some cystic lesions are characteristically solitary (e.g., digital mucous cyst), whereas others are often multiple (e.g., steatocystomas, eruptive vellus hair cysts).

Does the cyst demonstrate transillumination?

Some cysts are filled with clear or translucent material (e.g., apocrine cystadenoma; Fig. 34.1), which can be demonstrated via transillumination. Cysts that contain keratin (e.g., epidermoid cysts) do not transilluminate in the same brilliant manner.

Does the cyst have a punctum?

Epidermoid inclusion cysts nearly always demonstrate a punctum that can be visualized with the unaided eye, whereas other types of cysts, such as a trichilemmal cyst, often do not manifest a punctum.

Fig. 34.1. Transillumination of an apocrine cystadenoma.

Epidermoid Cyst ICD10 code L72.0

Pathogenesis

An epidermoid cyst, also called an *epidermal cyst* or *sebaceous cyst* (the latter is inaccurate and is disfavored) is the most common cyst of the skin. Epidermoid cysts are derived from the infundibulum (upper portion) of the hair follicle and are filled with keratin rather than sebaceous material. Some epidermoid cysts may be induced by trauma or follicular inflammation, especially acne (Fig. 34.2). An epidermal inclusion cyst is a closely related entity caused by inclusion of a fragment of epidermis into the dermis, without an attachment to a hair follicle (Fig. 34.3), and it is nearly always related to trauma. A milium (plural milia) is simply a small epidermoid cyst (≤2 mm in diameter).

Clinical Features

- Epidermoid cysts can occur at any age but are most common in adolescents and young adults.
- Epidermoid cysts can be solitary or multiple.
- The face, neck, upper trunk, and scrotum are preferentially affected by epidermoid cysts.
- Epidermoid cysts exist as skin-colored dermal nodules that may extend into the subcutis (see Fig. 34.2).
- A punctum or keratin-filled follicular, comedone-like opening may be present on the skin surface.
- If the punctum is large enough, white, foul-smelling, cheese-like keratin debris may be expressed.
- The size of epidermoid cysts varies, but most are 0.4 to 4 cm in diameter.
- Ruptured epidermoid cysts may engender inflammation, with acute pain, erythema, and dramatic enlargement (Figs. 34.4 and 34.5). Drainage of pus and cystic contents may occur.

Diagnosis

- The clinical presentation of a flesh-colored cystic nodule, located in the dermis and/or subcutis, often with an identifiable punctum, is diagnostic.
- In some cases, foul-smelling keratin debris can be expressed through the punctum or through a small incision with a no. 11 scalpel blade, further establishing the diagnosis.
- Rare cases may require surgical extirpation, with histopathologic assessment for diagnosis.

Treatment

- Epidermoid cysts are benign and do not require treatment unless they are symptomatic or unless there is concern for a commingled malignancy.
- Excision of the entire cyst is often utilized to ensure complete removal.
- An alternative procedure is incision with a no. 11 scalpel blade, or 3- or 4-mm punch, followed by careful removal of the entire the cyst wall with forceps and scissors. Use of this technique is more tedious and requires greater surgical expertise, but it results in a smaller scar.
- Ruptured or inflamed epidermoid cysts can be injected with intralesional triamcinolone (2–5 mg/mL). Cysts that are ripe or have already begun to drain should be incised with a no. 11 scalpel blade, with the contents evacuated, followed by intralesional triamcinolone (2–5 mg/mL). Although erythema may be interpreted as an infected cyst, in most cases the reaction is due to a foreign body response to the keratin, and oral antibiotics are not usually required.

Clinical Course

Once present, epidermoid cysts usually persist. In about one-third of cases, where there is spontaneous rupture of the cyst wall, the cyst is completely destroyed by the inflammatory response, leading to resolution.

Fig. 34.2. Epidermoid cysts in sites of old acne, a common reason for the development of these cysts. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 34.3. True epidermal inclusion cyst, with no punctum at site of trauma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 34.4. Inflamed epidermoid cyst due to rupture of cyst wall. The inflammation is due to a foreign body reaction and not infection. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 34.5. Incision with a no. 11 scalpel blade allows drainage of pus and keratin. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Trichilemmal Cyst ICD10 code L72.1

Pathogenesis

A trichilemmal cyst, also known as a *pilar cyst* or *wen,* is the second most common form of follicular cyst. In contrast to epidermoid cysts, which arise from the upper third of the hair follicle, trichilemmal cysts arise from the middle third of the hair follicle, a region called the *isthmus.* The pathogenesis of solitary trichilemmal cysts is unknown, but when multiple trichilemmal cysts are present, a familial autosomal dominant pattern of inheritance has been observed.

Clinical Features

- Trichilemmal cysts develop in adults, with women being affected more often than men.
- The vast majority of trichilemmal cysts involve the scalp, although any area of the body can be affected.
- Trichilemmal cysts present as smooth, firm, mobile subcutaneous nodules (Figs. 34.6 and 34.7).
- The overlying skin is typically normal, although larger lesions on the scalp may produce hair loss.
- No punctum is present in trichilemmal cysts, and inflammation is uncommon.

Diagnosis

- The clinical presentation of a firm, mobile nodule on the scalp of an adult strongly suggests the diagnosis.
- The differential diagnosis often includes an epidermoid cyst, which has a punctum, or a metastatic event on the scalp, which may be suggested by the history and physical examination. In general, trichilemmal cysts are firmer than epidermoid cysts.

Treatment

- Trichilemmal cysts are benign, and no treatment is required.
- Surgical excision is usually easy to perform. Often trichilemmal cysts can be enucleated intact, simply because of a thicker epithelial wall and more compacted keratin.

Clinical Course

Trichilemmal cysts may rarely progress to malignancy (so-called proliferating trichilemmal tumors or trichilemmal carcinomas). Because of this, unusually large or enlarging and changing cysts should be removed.

Fig. 34.6. Trichilemmal cyst of the scalp. These are typically firm and do not demonstrate an identifiable punctum. (From the William Weston Collection, Aurora, CO.)

Fig. 34.7. Unusually large trichilemmal cyst of the left parietal scalp. Changing or very large trichilemmal cysts should raise the possibility of malignancy arising within the cyst. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Steatocystoma ICD10 code L72.2

Pathogenesis

A steatocystoma is a type of cyst that arises from the sebaceous duct, which connects the sebaceous gland to the hair follicle. Because sebaceous glands are included in the wall of the cyst, the cyst is filled mainly with sebum. *Steatocystoma simplex* is the term applied to a solitary lesion, whereas *steatocystoma multiplex* is the term utilized when a single patient has numerous such cysts. Sometimes multiple lesions are caused by a condition inherited in an autosomal dominant fashion. Steatocystoma multiplex may also occur as part of pachyonychia congenita, a genodermatosis resulting in numerous cutaneous abnormalities.

Clinical Features

- Steatocystomas usually develop in adolescence or adulthood.
- Men and women are equally affected.
- Steatocystomas may be singular (simplex) or multiple (multiplex), with some patients having hundreds of steatocystomas (Fig. 34.8).
- Steatocystomas present as mobile, soft, skin-colored or slightly yellowish cysts, without overlying epidermal changes or puncta. Some lesions demonstrate a translucent quality, with blue or green hues present (Fig. 34.9).
- Most steatocystomas are small (2–6 mm in diameter), but larger lesions of up to 2 cm can be present.
- Most steatocystomas occur on the chest, but the scalp, neck, proximal extremities, and genitalia may also be involved.

Diagnosis

- The diagnosis should be suspected in patients with multiple, soft, skin-colored to slightly yellowish cysts on the chest area. If a family history of similar lesions exists, the diagnosis is nearly certain.
- The diagnosis can also be established by puncturing the cyst wall with a no. 11 scalpel blade, with release of a clear to milky yellow and oily liquid. The contents are usually odorless, in contrast to the contents of epidermoid cysts, which are white in color and foul-smelling.
- In solitary or difficult presentations, the diagnosis is established by removing the cyst with a punch or excisional biopsy and submitting it for examination.

Treatment

- Steatocystomas are benign, and no treatment is required.
- Where desired, individual lesions can be removed by a punch or small excision.
- In patients with numerous cysts, individual cysts can be drained with a needle or a small incision made with a no. 11 scalpel blade. This produces only a temporary improvement but is useful on facial lesions for cosmetic purposes.
- Isotretinoin has been used in some patients with numerous lesions, with moderate improvement in the size of the lesions, but the lesions return slowly once the oral isotretinoin is withdrawn.

Clinical Course

Once present, steatocystomas persist indefinitely unless surgical intervention transpires, but no significant malignant potential exists.

Fig. 34.8. Multiple small, skin-colored to slightly yellowish cystic lesions of steatocystoma multiplex. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 34.9. Slightly exophytic steatocystoma, with a green-blue translucent appearance. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Apocrine Cystadenoma ICD10 code D23.9

Pathogenesis

As the name implies, apocrine cystadenomas, also called *apocrine hidrocystomas*, are cystic lesions of apocrine origin. The cysts are usually composed of apocrine ductal and glandular elements. Although any apocrine gland may give rise to these cystic structures, the eyelid margin is a common site of involvement. Apocrine cystadenomas at this site arise from the Moll glands, which are specialized apocrine glands that are found at the eyelid margin. The cause of apocrine cystadenomas is unknown.

Clinical Features

- Apocrine cystadenomas arise in older adults and geriatric patients.
- Usually, apocrine cystadenomas are solitary, but multiple lesions can occur.
- Most cystadenomas are located on the face, especially around the eyelid margins (Figs. 34.10 and 34.11).
- Apocrine cystadenomas present as smooth, dome-shaped papules, which may be compressible.
- Apocrine cystadenomas are usually asymptomatic.
- Apocrine cystadenomas may be translucent or have a bluish hue.

Diagnosis

- The clinical appearance and distribution of apocrine cystadenomas are rather characteristic, although occasional cases may resemble basal cell carcinoma.
- The cystic nature can often be confirmed by compression or via transillumination (see Fig. 34.1).
- The diagnosis can be confirmed by making a small incision with a no. 11 scalpel blade, with the expression of a clear watery fluid.
- Rare cases may require a shave or punch biopsy for diagnosis. The histologic findings are diagnostic.

Treatment

- Apocrine cystadenomas are benign, and no treatment is necessary.
- Shave removal of the apocrine cystadenomas will yield resolution in most cases, but larger lesions may require a punch or small excision biopsy.
- Carbon dioxide laser ablation is curative, but this modality is rarely used due to issues of safety and availability.

Clinical Course

Apocrine cystadenomas are benign sweat gland neoplasms that will persist indefinitely, unless surgical intervention transpires. Slow growth, over a period of years, is common.

Fig. 34.10. Typical dome-shaped superficial cystic appearance of an apocrine cystadenoma. The medial and lateral aspects of the of the area around the eyes is the classic location. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 34.11. Apocrine cystadenoma on eyelid margin. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Digital Mucous Cyst ICD10 code M71.349

Pathogenesis

The pathogenesis of digital mucous cysts (DMCs) is not fully understood. Evidence suggests they are not true neoplasms but instead are the result of degenerative changes of trauma and aging (e.g., osteoarthritis) at the distal interphalangeal joint. This theory is supported by studies (e.g., surgical dissections and dye studies) that show connections between the joint space and digital mucous cysts. The material in the cysts, like fluid in joints, is composed chiefly of hyaluronic acid that appears clear, with a jelly-like consistency (Fig. 34.12).

Clinical Features

- DMCs usually arise in older adults.
- DMCs are usually asymptomatic but can be tender.
- DMCs are usually located on the dorsal fingers, near the proximal nail fold. Less often, DMCs occur on the toes.
- DMCs present as smooth dome-shaped papules, which may be compressible (Figs. 34.13–34.15).
- DMCs may be skin-colored or translucent.
- Less common variants may be ulcerated, inflamed, or verrucous.
- Lesions over the proximal nail fold may produce a linear depression or groove in the nail plate (Fig. 34.14).

Diagnosis

- The clinical appearance and distribution are often characteristic of DMCs.
- The cystic nature of DMCs can often be confirmed by compression or via transillumination.
- The diagnosis of DMCs can be confirmed by making a small incision with a no. 11 scalpel blade, with expression of a clear, viscous, and gelatinous fluid. However, care should be taken to ensure the joint space does not become infected.
- Rare cases require a shave or punch biopsy for diagnosis. The histologic findings are diagnostic. Again, care should be taken to ensure the joint space does not become infected.

Treatment

- DMCs are benign, and no treatment is required.
- Intralesional triamcinolone can be used but with variable success.
- Surgical excision of the cyst is often used, but ablation of the connection to the joint space is required.
- Shave removal of the cyst, with cauterization of the base by electrodessication, or with use of a chemical agent, such as phenol, may be used.
- DMCs can also be treated by supplying the patient with sterile, 27-gauge needles and with instructions to puncture the cyst and forcibly express the contents. This action may be repeated as often as necessary.
- Less common treatment modalities include carbon dioxide laser ablation and cryosurgery.

Clinical Course

DMCs usually persist indefinitely, but spontaneous resolution can transpire.

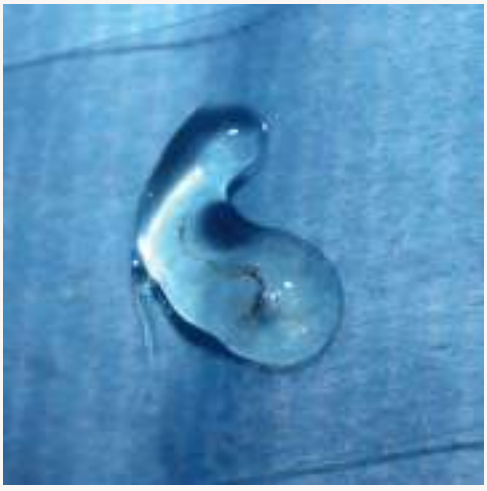

Fig. 34.12. Clear, jelly-like contents of a digital mucous cyst. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 34.13. Digital mucous cyst with adjacent scale. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 34.14. Hemorrhagic digital mucous cyst with nail deformity.

Fig. 34.15. Translucent digital mucous cyst over distal interphalangeal joint. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Cutaneous Odontogenic Sinus Tract ICD10 code K04.6

Pathogenesis

A cutaneous odontogenic sinus tract (COST), also called a *cutaneous dental sinus tract* and *dentocutaneous sinus tract*, is a result of neglected carious teeth that develop a bacterial infection and a periapical abscess. The periapical abscess extends along the periosteum and, ultimately, erodes through the skin to produce an oral or cutaneous sinus tract. Less common causes include dental implants (Fig. 34.16), dental cysts, and unerupted teeth.

Clinical Features

- Typically, COST arises in older adults with poor dental hygiene and carious teeth (Fig. 34.17). In occasional cases, the teeth may appear normal.
- The overwhelming majority of odontogenic sinus tracts (~80%) occur around the mandible, particularly around the chin and submental region.
- The sinus tract may appear as an opening that is often subtly depressed and intermittently discharges purulent material and blood (Fig. 34.18), or it may appear as an opening, with granulation tissue (Fig. 34.19).
- Palpation may demonstrate a variable soft induration.
- Some patients may have systemic evidence of infection, such as malaise and fever.

Diagnosis

- The clinical appearance of a sinus, particularly one that discharges purulent debris in the region of the face and neck and in proximity to the teeth, should raise suspicion of a COST.
- The oral cavity and teeth should be examined for poor oral hygiene and potentially carious teeth or evidence of extensive and failing restorative work.
- Radiographic studies, usually a panoramic (Fig. 34.20) or periapical x-ray, will identify the apical abscess.
- The drainage can be cultured, but most infections will be polymicrobial.
- Biopsies are sometimes used to exclude malignancy. Whereas the histological findings can support the diagnosis, they are not specific.

Treatment

- The treatment of choice is referral to a dentist or oral surgeon for a root canal, removal of teeth, and/or dental implants, as necessary.
- Empiric therapy with antibiotics, in addition to surgery, is often performed if the patient demonstrates systemic signs of infection or is immunocompromised. Treatment options include oral penicillin VK (500 mg PO tid), amoxicillin-clavulanate (500 mg/125 mg PO tid), and clindamycin (300–450 mg PO tid or qid, or 600–900 mg IV q6–8h).

Fig. 34.16. X-ray demonstrating a small apical abscess beneath a dental implant. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 34.17. Poor oral hygiene and numerous carious teeth was the source of a cutaneous odontogenic sinus tract in the submental region. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 34.18. Chronic sinus tract along the anterior mandible. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 34.19. Chronic sinus tract of the chin, with granulation tissue due to an odontogenic sinus tract. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

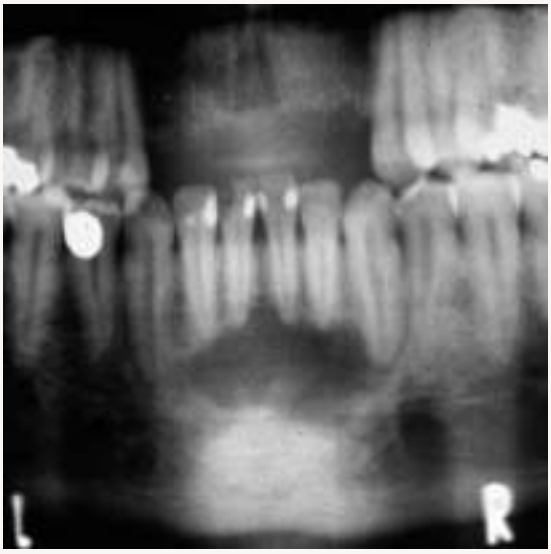

Fig. 34.20. Panoramic dental x-ray demonstrating a massive apical abscess beneath the mandibular incisors. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 35
Subcutaneous Lumps

Subcutaneous lumps represent a heterogeneous category of cutaneous disorders that usually present as palpable nodules in the deeper extents of the skin and soft tissue. Angiolipomas and lipomas, comprised of vessels and benign adipose, or adipose alone, represent the most common entities in this category of disease. Other neoplasms in this category include metastatic, neural, and fibrohistiocytic tumors.

Differential Diagnosis of Subcutaneous Lumps

Common

- Angiolipoma
- Lipoma

Uncommon (Selected Examples)

- Hibernoma
- Lipoblastoma
- Liposarcoma
- Malignant fibrous histiocytoma
- Metastatic solid tumors
- Metastatic tumors of lymphoid origin
- Metastatic tumors of myeloid origin
- Nodular fasciitis
- Schwannoma
- Spindle cell lipoma

IMPORTANT HISTORY QUESTIONS

How long has the lesion(s) been present?

Benign tumors, such as angiolipomas and lipomas, typically grow slowly and have been present for years at the time of presentation. A new or rapidly growing subcutaneous growth should raise concern for a more aggressive neoplasm.

Has the lesion changed?

Benign neoplasms typically grow slowly, whereas malignant neoplasms (e.g., liposarcoma, malignant fibrous histiocytoma, metastatic tumors), and some select benign neoplasms (e.g., nodular fasciitis), often demonstrate rapid growth.

Is there a family history of similar lesions?

Angiolipomas and lipomas can both be familial (e.g., benign familial lipomatosis). Therefore, an affirmative answer could indicate an inherited disorder. However, it is important to realize that a negative response to this question does not exclude multiple lipomas or angiolipomas because most cases are sporadic.

IMPORTANT PHYSICAL FINDINGS

How many lesions are present?

Multiple lesions occurring in a person could indicate multiple lipomas, angiolipomas, or even a metastatic process. Other types of tumors, such as liposarcoma, malignant fibrous histiocytoma, or spindle cell lipoma, nearly always occur as a singular process.

How large is the tumor?

In general, small tumors are more likely to be benign, whereas larger tumors are more likely to be malignant. For example, most benign lipomas are less than 5 cm in diameter; most liposarcomas are over 10 cm in size at the time of presentation.

What does the tumor feel like on palpation?

Most lipomas are soft and compressible, whereas most fibrohistiocytic tumors and metastatic tumors often feel firm. Some invasive malignant processes may even seem tethered to underlying structures.

Does the lesion appear to be sharply circumscribed?

Most lipomas and angiolipomas, as well as rare lipomatous tumors, are usually sharply delineated from the surrounding fat. Some can even be moved laterally, whereas metastatic lesions and most fibrohistiocytic tumors usually do not have well delineated margins and infiltrate into the adjacent subcutis.

Where are the lesions located?

The distribution of the lesions can be important. Multiple lipomas and angiolipomas often affect the forearms, thighs, and lateral thorax. Spindle cell lipoma often involves the head and neck.

Lipoma ICD10 code D17 (site dependent)

Pathogenesis

A lipoma is benign tumor of fat. It is a common condition and the most common neoplasm of the subcutis. There is evidence that lipomas, although benign, are often the result of one or more genetic abnormalities. Translocations and other gene rearrangements of the chromosome 12q15 area are among those most often observed. In many cases, multiple lipomas are inherited as an autosomal dominant condition (benign familial lipomatosis).

Clinical Features

- Lipomas usually develop during adulthood but may also present in younger or older patients.
- Rarely, lipomas are present at birth.
- Lipomas may appear anywhere on the body but the upper trunk and extremity are most often affected.
- Lipomas deeper than the subcutaneous tissue (e.g., intramuscular lipomas) can occur.
- Lipomas present as a skin-colored subcutaneous lesion that is soft and circumscribed on palpation (Fig. 35.1). Some lipomas are slightly mobile on palpation.
- Lipomas are often asymptomatic but can be tender or painful, especially when compressed.
- Large lipomas may cause dilation of overlying blood vessels (Fig. 35.2).
- Rare lipomas may compress nerves to produce a peripheral neuropathy.

Diagnosis

- Lipomas often can be diagnosed simply based on the history and clinical presentation of a long-standing, slow-growing, soft, and well-circumscribed subcutaneous nodule, with a fatty consistency.
- If the diagnosis is in question, a biopsy may be performed. It must be remembered that the findings of interest exist deep in the soft tissue, and an incisional or excisional biopsy may be necessary.
- Rare cases potentially associated with a peripheral neuropathy may require magnetic resonance imaging (MRI) for assessment.

Treatment

- Lipomas are benign and do not require treatment.
- For symptomatic lesions, surgical excision may be performed. Many lipomas can be removed by shelling (or squishing) out the lipoma through a small opening, such as a punch biopsy, but this does not work in all cases. Large lipomas (Fig. 35.3), or those located on the forehead or posterior neck, may lie beneath the galea or may be admixed with collagen (fibrolipomas), complicating removal. Liposuction can be done in select cases.

Clinical Course

Untreated, most lipomas reach a stable size and persist indefinitely. Transformation of a benign lipoma to liposarcoma has been described but is rare. Interestingly, lipomas are metabolically independent of the rest of the body and will not usually change in volume, even if a patient gains or loses weight.

Fig. 35.1. Multiple lipomas. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 35.2. Large lipoma with numerous vessels. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 35.3. Intraoperative view of intramuscular lipoma demonstrating demarcation. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Angiolipoma ICD10 code D17 (site dependent)

Pathogenesis

Angiolipomas represent the second most common subcutaneous tumor. In about 5% of cases, multiple angiolipomas can be inherited in autosomal dominant fashion (e.g., benign familial angiolipomatosis), which suggests a genetic anomaly that has not been identified. In contrast to lipomas, which are composed only of mature lipocytes, angiolipomas are comprised of mature lipocytes and numerous, thin-walled blood vessels that are often thrombosed.

Clinical Features

- Angiolipomas usually develop in adulthood (20–40 years), but they can also present in younger or older patients. Angiolipomas are rare in children.
- Angiolipomas may appear anywhere on the body. Most occur on the upper trunk and upper extremities. The forearm is the site most often affected (Figs. 35.4 and 35.5).
- Angiolipomas are often asymptomatic but can be tender or painful, especially when compressed.
- More than 90% of cutaneous angiolipomas are 2 cm or larger.
- Angiolipomas present as skin-colored or slightly violaceous, soft to slightly firm, well-circumscribed, subcutaneous lesions. When multiple lesions are present, there is often general symmetry.
- Most cases are slightly mobile with palpation.
- Rare cases can compress adjacent nerves, yielding a peripheral neuropathy.
- Rare cases can develop a locally aggressive growth pattern, with infiltration into skeletal muscle.

Diagnosis

- Angiolipomas are often diagnosed based upon the history and clinical presentation of a long-standing, slow-growing, soft, and well-circumscribed subcutaneous nodule, with a fatty consistency. Angiolipomas are more likely to be painful, in comparison to common lipomas.
- If the diagnosis is in question, a biopsy may be performed. It must be remembered that the findings of interest exist deep in the soft tissue, and an incisional or excisional biopsy may be necessary.
- Rare cases potentially associated with a peripheral neuropathy may require MRI for assessment.

Treatment

- Angiolipomas are benign. No treatment is required.
- Lesions that are painful, or for which removal is otherwise desired, can be treated with surgical extirpation, in a manner similar to that for lipomas.
- Liposuction surgery can be performed in select cases.

Clinical Course

Untreated, angiolipomas usually reach a stable size and persist indefinitely. Malignant transformation to liposarcoma has not been observed in angiolipomas.

Fig. 35.4. Numerous large angiolipomas of the extremities and trunk. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 35.5. Multiple large cutaneous angiolipomas, with normal overlying skin. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Subcutaneous Metastatic Tumors ICD10 code C792.2

Solid Tumors That Frequently Metastasize to the Skin

- Breast carcinoma
- Colon and rectum adenocarcinoma
- Melanoma
- Oral mucosal malignancies
- Renal carcinoma
- Stomach carcinoma
- Squamous cell carcinoma of the lung

Hematologic Malignancies That Frequently Metastasize to the Skin

- Myeloid leukemias
- Monocytic leukemias
- Non–Hodgkin B cell lymphomas
- T cell lymphomas

Pathogenesis

The incidence of certain malignancies becoming metastatic and involving the skin has varied in studies because of unique aspects of the population under study or for other reasons of methodology. Overall, perhaps 1% to 9% of persons with an internal malignancy will develop metastases to the skin. In most cases, skin metastases occur in later stages of disease. In about 5% of cases, mulitple cutaneous metastases may be the presenting feature of the malignancy. Although most metastatic deposits involve the dermis, a subset may present with subcutaneous nodules that mimic fatty neoplasms. The most common malignancies to involve the skin are listed in the box.

Clinical Features

- Metastatic deposits in the skin occur more often in elderly persons, probably because this age group is most likely to have internal malignancies.
- Subcutaneous metastatic tumors may affect any region of the body, with different malignancies having affinities for different sites.
- Subcutaneous metastatic deposits may be solitary or numerous.
- Metastatic nodules are typically asymptomatic, unless there is nerve impingement.
- Metastatic nodules vary in size but can become large.
- Metastatic nodules usually demonstrate an unremarkable overlying skin surface (Figs. 35.6–35.8).
- The patient may be cachectic due to the overall metastatic burden.

Diagnosis

- Subcutaneous metastatic lesions do not have a characteristic appearance and can resemble benign soft tissue tumors, such as lipomas and angiolipomas. The patient depicted in Fig. 35.7 was referred from the emergency room to dermatology for excision of an assumed lipoma.
- Findings that should arouse suspicion for a metastatic nodule to the skin include a history of the following:
  - Known internal malignancy
  - Rapid growth
  - Onset of multiple lesions
  - Recent unexplained weight loss
- The diagnosis is established by doing a deep punch incisional or excisional biopsy that samples the process of key diagnostic interest.

Clinical Course

Clearly, the clinical course of metastatic disease involving the skin depends upon the tumor type and the systemic treatment options that are available. In general, once a patient develops multiple metastatic deposits to the skin, the prognosis is poor. Most patients die from the primary malignancy within 2 years.

Fig. 35.6. Subcutaneous metastatic acute myeloid leukemia. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 35.7. Subcutaneous metastatic melanoma that was clinically thought to be a lipoma. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Fig. 35.8. Subcutaneous metastatic adenocarcinoma originating from the stomach in a cachectic patient. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 36
Cutaneous Diseases of Travelers

A recent study found that skin disease affects up to 8% of travelers. Skin disease is the third most common problem of travelers, after diarrhea and respiratory disorders. It is worthwhile for all health care providers to have a passing familiarity with the major cutaneous diseases that occur in travelers. Although this chapter can only address the issue in a limited fashion, the Centers for Disease Control and Prevention (CDC) has an interactive website where patients and clinicians can enter a travel destination to access country-specific health advisories (https://wwwnc.cdc.gov/travel).

Ten Common Cutaneous Diseases of the Returning Traveler

1. Cutaneous larva migrans
2. Soft tissue bacterial infections
3. Arthropod bites
4. Allergic reaction or urticaria
5. Myiasis
6. Superficial fungal infection
7. Injuries including animal bites
8. Scabies
9. Cutaneous leishmaniasis
10. Tungiasis

IMPORTANT HISTORY QUESTIONS

Where have you traveled recently?

Some diseases are common in certain areas of the world. For example, leishmaniasis is encountered in persons traveling to Central and South America or the Middle East. Myiasis is common in persons traveling to Central and South America or parts of Africa. Even some US territories, such as Puerto Rico, may be affected by diseases, such as Zika virus or chikungunya virus, which can cause a viral exanthem.

Did you develop skin disease before you traveled, while traveling, or after you returned home?

It is important to understand the timeline of disease activity. Some skin disease in the traveler represents aggravation of a preexisting condition, such as atopic dermatitis. Other conditions, such as urticaria and other allergic reactions, can develop during travel simply because of exposure to an allergen. Finally, some conditions such as myiasis and leishmaniasis are notorious for developing in the weeks and months after travel.

Were you outdoors or in a rural area during your travels?

Some diseases, such as leishmaniasis and myiasis, are caused by the bite of flying insects, and determining whether the patient has been outdoors is important (e.g., hiking, camping). Cutaneous larva migrans is a disease associated with exposure to beach sand contaminated with cat or dog feces. Tungiasis, caused by the bite of the sand flea, is also acquired on beaches.

On your trip, did you use preventive measures to avoid disease?

The use of insect repellents, bed netting, and/or sleeping in screened areas with environmental controls are measures that lessen the likelihood of a traveler acquiring some cutaneous diseases. Avoiding direct contact with contaminated beach sand is another measure. For some diseases, such as yellow fever, there is a vaccine for those traveling to endemic areas.

Cutaneous Larva Migrans ICD10 Code B76.9

Where and How

Cutaneous larva migrans (CLM) is a parasitic skin infection caused by the hookworms *Ancylostoma braziliense* and *Ancylostoma caninum*, which affect the intestines of cats and dogs. Humans are infected with CLM larvae by placing their bare skin (e.g., feet, hands, buttocks) in contact with sand contaminated by animal feces. The larvae penetrate human skin, but cannot complete a full life cycle. The organism migrates under the skin surface, leading to a so-called creeping eruption. CLM occurs in travelers from sub-Saharan Africa, Asia, Central and South America, and the Caribbean. Some cases occur in the United States, on the Gulf Coast, but use of anthelmintic agents in pets has greatly reduced the rate of endemic acquisition.

Clinical Presentation

CLM causes an erythematous pruritic eruption that migrates (or creeps) under the skin (Fig. 36.1; also see Figs. 17.15 to 17.18). The condition usually begins days or weeks after exposure, but larva can lie dormant for months before migrating. Excoriation can yield ulceration, with secondary infection. The lesions affect skin exposed to sand, such as the hands, feet, and buttocks. The tracks may advance a few millimeters to several centimeters each day.

Diagnosis

The diagnosis of CLM is based on an appropriate travel history and characteristic clinical appearance. Confirmation by biopsy is challenging because the organism is always migrating ahead of the host response.

Prevention and Treatment

Prevention includes wearing shoes in areas of contaminated sand. Many communities ban dogs from beaches for this reason. Oral agents for CLM include albendazole, mebendazole, and ivermectin. Thiabendazole can be used as a topical cream or systemic (oral) agent. Destructive modalities (e.g., liquid nitrogen) are problematic because the organism lies ahead of any visible inflammatory response.

Fig. 36.1. Linear serpiginous lesion on the foot of a child. (From the William Weston Collection, Aurora, CO.)

Myiasis ICD10 Code B87.9

Where and How

Myiasis is a disease caused by the parasitic infestation of the human body with fly larvae. There are different forms of myiasis, but the two types we will concern ourselves herein with are caused by *Dermatobia hominis* (the human bot fly) and *Cordylobia anthropophaga* (the tumbu fly). Bot fly myiasis is seen throughout Central and South America; the fly larva is placed on the skin by mosquitoes in a complex life cycle interplay. Tumbu fly myiasis is seen in Africa (Fig. 36.2); it is caused by clothing and linens hung outdoors, where flies lay eggs on the fabric and that are later in contact with skin.

Clinical Presentation

Myiasis is caused by fly larva burrowing into the skin and maturing there, leading to an expansive nodule. In myiasis, affected persons often complain of a cyst or bump that is associated with a moving sensation. The lesion may grow over weeks or months but, eventually, to complete the life cycle, matured larva must exit the skin to become mature insects. Because the organism must respire, often the nodule is seen to have a central punctum, or breathing hole.

Diagnosis

The diagnosis of myiasis is usually established by a travel history of outdoor exposure at the destination of interest and a clinical situation of a nodule or dermal abscess, often with a central punctum and with the sensation of movement.

Prevention and Treatment

Prevention of bot fly myiasis includes avoiding biting insects in an outdoor environment and the use of bed netting when sleeping outdoors. Prevention of tumbu fly myiasis includes ironing clothing and sheets hung outdoors. Although there are regional treatments for myiasis used by persons in an endemic area, such as bacon fat poultices, excision is the treatment of choice for imported cases of myiasis seen in the United States.

Fig. 36.2. Tumbu fly myiasis. These are numerous abscesses on the abdomen of a traveler who has recently returned from Africa. It is believed that he acquired this from the bed sheets at the hotel where he was staying. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Tinea Nigra ICD10 Code B36.1

Where and How

All superficial fungal infections can be exacerbated by hot (sweaty) tropical climates, but there are some superficial fungal infections, such as tinea nigra, that occur chiefly in tropical areas outside the United States. Tinea nigra is caused by *Hortaea werneckii,* a pigment-producing fungus.

Clinical Presentation

Tinea nigra often involves the hands and feet and creates a slowly expansive, thin, pigmented patch, with minimal scale (Fig. 36.3), which may be confused with a pigmented lesion, such as acral melanoma.

Diagnosis

Although tinea nigra may mimic a pigmented lesion, a potassium hydroxide (KOH) preparation will demonstrate the pigmented fungus in the same manner in which other superficial fungal infections are recognized (Fig. 36.4). Alternatively, a biopsy can immediately exclude a melanocytic neoplasm and include tinea nigra. Fungal culture yields a pigmented colony with about 1 week of growth.

Prevention and Treatment

Keeping feet dry may aid in prevention. Topical antifungal agents, such as ketoconazole, usually lead to resolution of tinea nigra in 2 to 4 weeks. Topical keratolytic agents, such as salicylic acid, can reduce observed pigmentation. Spontaneous resolution is a rare event.

Fig. 36.3. Tan to brown pigmented patch of tinea nigra acquired in Southeast Asia. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

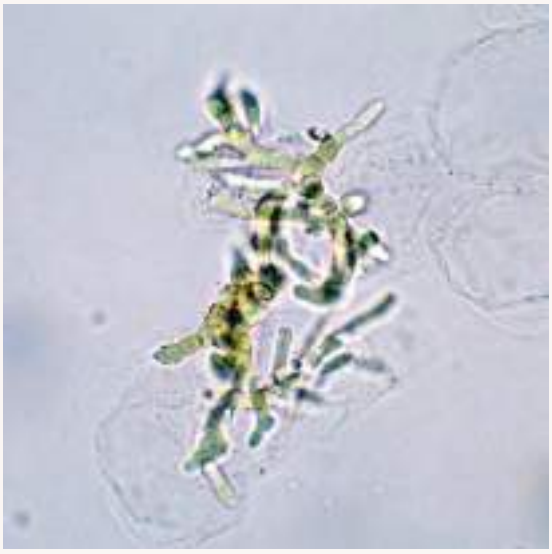

Fig. 36.4. Positive KOH of tinea nigra demonstrating pigmented hyphae (400×). (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Cutaneous Leishmaniasis ICD10 Code B55.1

Where and How

Cutaneous leishmaniasis is a protozoal disease that causes skin ulcers. New World leishmaniasis occurs in extreme South Texas, Mexico, and Central and South America and is caused by the bite of the *Lutzomyia* fly. Old World leishmaniasis is caused by the bite of the *Phlebotomus* fly and is more common in the Middle East, including Israel, parts of south central Asia, and northwest Africa. Flies simply serve as vectors for the protozoal organisms. There are different species of leishmaniasis among New World and Old World categories of disease.

Clinical Presentation

The common denominator in cutaneous leishmaniasis is an ulcer that usually begins weeks, or even a few months, after exposure. Consequently, the disease is often first suspected after the traveler has returned home. The ulcers may have a raised border and are often painless but can be painful, particularly when superinfected. Satellite lesions (Fig. 36.5), regional lymphadenopathy, and nodular lymphangitis (sporotrichoid spread) can be seen.

The ulcers of leishmaniasis usually heal eventually, even without treatment, but result in scarring. A concern with some forms of New World leishmaniasis, particularly that acquired in South America, is mucocutaneous leishmaniasis, which involves the mucosa and can occur years or decades after the cutaneous lesions have resolved. This is one reason why speciation via laboratory testing may be prudent in some cases of New World disease.

Diagnosis

The diagnosis of leishmaniasis should be suspected based on the clinical presentation and an appropriate travel history. A biopsy of the ulcer edge may show characteristic amastigote forms of the parasite in dermal histiocytes, but the number of organisms diminishes over time, and these organisms can be challenging to locate. The CDC offers diagnostic assistance, including a pathology consultation using a commercially unavailable immunohistochemical stain, tissue culture, and/or polymerase chain reaction (PCR)-based speciation. Additional information is available at https://www.cdc.gov/parasites/leishmaniasis/resources/pdf/cdc_diagnosis_guide_leishmaniasis_2016.pdf.

Prevention and Treatment

Lutzomyia and *Phlebotomus* flies bite during the evening hours, and the use of insect repellent and bed netting is necessary to prevent bites. Many forms of leishmaniasis will resolve, even without treatment. Treatment to hasten resolution may include topical paromomycin 15%/gentamicin 0.5% cream, oral fluconazole, itraconazole, or rifampin or intravenous sodium stibogluconate or amphotericin. The only agent approved to treat leishmaniasis in the United States is miltefosine, but it is expensive and it is logistically difficult to use. As noted, because of the risk of mucocutaneous disease with some New World forms (subgenus *Viannia*), advanced testing to determine the species may be prudent in these circumstances to ensure optimal treatment. The CDC and state health department can often assist the clinician.

Fig. 36.5. Leishmaniasis in a child returning from Panama. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

Tungiasis ICD10 Code B88.1

Where and How

Tungiasis is a disease caused by the sand flea, *Tunga penetrans*. This flea burrows into the skin of humans, usually on the foot, and then lives in parasitic fashion, imbibing blood from the host and laying eggs onto the epithelial surface, where its own hindquarters protrude. It is thought that the disease was acquired by Christopher Columbus, when he made landfall in the Caribbean, but it has spread to parts of Africa, India, Pakistan, and Latin America.

Clinical Presentation

Tungiasis usually affects the feet. The lesion begins as a punctum or ulcer and resembles a discolored nodule, with a central black dot (Fig. 36.6). The flea breathes through an opening in the skin, and the lesion ranges in size from 4 to 10 mm. Lesions can be pruritic, or even painful, although sometimes no symptoms are experienced. In some situations there may be inflammation and swelling. Superinfection is a concern and often is a complicating factor of tungiasis.

Diagnosis

The diagnosis is often suspected based on the travel history and clinical examination. Excision, which is also the treatment of choice, will often provide firm histologic evidence of the infestation.

Prevention and Treatment

Tungiasis can be prevented by avoiding direct contact with infested sand. Tungiasis is often self-limited because the organism dies, and the skin sheds. When treatment is necessary, physical removal is preferred, and often, if the flea is engorged, excision will be necessary. Topical antiparasitic medications such as ivermectin, metrifonate, and thiabendazole have been reported. Also suffocation of the flea using petrolatum jelly or killing the flea with liquid nitrogen is possible. Precautions should be taken to prevent secondary infections and tetanus/gangrene.

Fig. 36.6. Tungiasis on the toe of a child returning from vacation in Belize. (From the Joanna Burch Collection, Aurora, CO.)

Phytophotodermatitis ICD10 Code L56.2

Where and How

Phytophotodermatitis is a phototoxic reaction that occurs due to the presence of furocoumarins on the skin, typically from plant sources. Citrus fruit, including lime juice, can produce this reaction. Hence, in travel situations it has been given various names, such as Cancun dermatitis and margarita dermatitis because it can occur in lime juice, served with beer or tequila, which leaks on the skin and is then exposed to sunlight. The skin of the mango may also produce phytophotodermatitis.

Clinical Presentation

During the acute stage, there is inflammation, pruritus, and erythematous patches, plaques, or even blisters on the skin. These lesions often assume irregular linear shapes (Fig. 36.7), which suggest an exogenous injury.

The latter stages of phytophotodermatitis consist of hyperpigmentation that is slow to resolve (Fig. 36.8).

Diagnosis

The diagnosis is usually based on the clinical presentation, including unusual or linear configurations of lesions, with a supportive history of sun exposure and exposure to exogenous sources of furocoumarins, including the juice of citrus fruits such as limes.

Prevention and Treatment

Avoiding contact of furocoumarins with the skin, in the presence of sunlight, will prevent phytophotodermatitis. Once the condition has resulted in postinflammatory hyperpigmentation, patience will be necessary because resolution is slow.

Fig. 36.7. Phytophotodermatitis due to contact with lime in a child demonstrating irregular and strangely linear erythema, with early brownish discoloration. (From the William Weston Collection, Aurora, CO.)

Fig. 36.8. Phytophotodermatitis in a child demonstrating perioral brownish discoloration due to exposure to the skin of a mango. (From the William Weston Collection, Aurora, CO.)

Seabather's Eruption ICD10 Code B65.3

Where and How

Seabather's eruption is a pruritic papular eruption that occurs underneath a swimsuit after exposure to seawater that contains the larval form of the thimble jellyfish, *Linuche unguiculata*. Most cases occur on the eastern Atlantic coast, particularly in Florida and Brazil, from March to August, with a peak incidence in May and June.

Clinical Presentation

Seabather's eruption occurs on skin beneath a bathing suit. A burning or stinging feeling may be experienced on the skin, even while still in the water. As the swimmer gets out of the sea, the nematocyst may release more toxin, resulting in a painful sensation. Showering in fresh water and rubbing with a towel (mechanical stimulation) make the eruption worse. The end result is a rash, consisting of pruritic erythematous papules beneath the bathing suit (Fig. 36.9).

Diagnosis

The diagnosis is established via an appropriate exposure history and the findings of a papular and pruritic rash on skin covered by the bathing suit.

Prevention and Treatment

Prevention includes avoidance of the seawater when *Linuche unguiculata* levels are high. Dilute vinegar or rubbing alcohol can neutralize any toxin that is left on the skin. Topical steroids may be used to treat the rash. Contaminated clothing should be thoroughly washed.

Fig. 36.9. Seabather's eruption demonstrating pruritic erythema papules beneath the bathing suit. (From the Fitzsimons Army Medical Center Collection, Aurora, CO.)

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Chapter 37
Topical Treatment Pearls

INTRODUCTION

Becoming proficient and knowledgeable about skin disease involves the accumulation of experience, but there are certainly pearls that can be shared to expedite the process. For example, even before one writes a single prescription for dermatitis, it is important to consider the patient's bathing habits and overall skin care, because these habits and practices may have caused or perpetuated the skin problem.

Understanding Soap Ingredients

Lye-Based

- Sodium tallowate
- Sodium cocoate
- Sodium palm kernelate
- Sodium palmate

Syndet

- Sodium lauroyl isethionate
- Sodium isethionate
- Sodium cococyl isethionate

BEST SOAPS FOR XEROSIS AND DERMATITIS

Soaps are the most common irritant that people are exposed to each day, yet patients and providers do not always appreciate the differences among various soaps. Normal skin has a slightly acidic pH. The precise pH is site-dependent, but typically the skin pH is between 4.5 and 5.5. The skin has the ability to regulate pH, chiefly via production of lactic acid, with lactate contained in sebum (the so-called lipid mantle).

However, most soaps are lye-based and hence have a high pH in relation to the skin. For example, in one study, Neutrogena soap had a pH of 9.6, and Ivory soap had a pH of 10.1. Although there are other factors that affect the irritancy of a soap, in general, products with a neutral or slightly acidic pH are less irritating (e.g., Dove soap has a pH of 7.3; Cetaphil has a pH of 6.4).

As a general rule, lye-based and so-called natural soaps will often be more irritating than synthetic soaps (termed *syndets* [synesthetic detergents] in the soap industry). The composition of soaps may vary over time, and a brand name may have more than one line containing different components.

The box above lists common lye-based (natural) and synthetic soap ingredients (syndets). Patients do not need to know a long list of ingredients; they only need to know that the primary tensioactive agent of milder soaps has the word *isethionate* in the list of ingredients. All patients with xerosis, dermatitis, or recent dermatitis (within 4 weeks) may benefit from use of a syndet.

GRAM-NEGATIVE TOE WEB INFECTIONS: ANOTHER SOAP ISSUE

Gram-negative toe web infections (GNTWIs) are common in humid climates and in persons with hyperhidrosis. GNTWIs often demonstrate an unpleasant odor and erythema, erosions, and purulence that may be yellow, yellow-green, or green-blue, especially if *Pseudomonas* is a dominant pathogen (Fig. 37.1).

Although prescription antimicrobial therapy is appropriate, a chief goal is to re-establish normal gram-positive commensals (GPCs). Military studies have indicated that use of antibacterial soaps preferentially deplete GPCs and could cause or worsen GNTWIs. This effect is not seen in those using soaps without certain antibacterial agents. Avoidance of over-the-counter (OTC) antibacterial soaps is an important step in the management of GNTWIs. Recently, the US Food and Drug Administration (FDA) asked manufacturers to cease use of 19 antibacterial ingredients in soap, including triclosan and triclocarban.

WHAT IS THE BEST MOISTURIZER?

OTC moisturizers, depilatories, and antiaging products, represent a $121 billion/year industry, often with sophisticated advertising campaigns. Development of

Fig. 37.1. Severe pseudomonal toe web infection. (From the William Weston Collection, Aurora, CO.)

Fig. 37.2. Xerotic heels treated with ammonium lactate *(left)* and an occlusive moisturizer *(right)*.

a good moisturizer is a complex issue, but fundamentally, moisturizers have three major components: oils (including petrolatum-based and plant oils) that occlude, humectants that bind water, and biologically active compounds.

Because most moisturizers contain oil, recognizing differences in humectants and biologically active compounds is useful in comparing moisturizers. Common humectants include sugar alcohols (e.g., glycerol, sorbitol), honey, aloe, and urea. Urea is an outstanding humectant. An excellent, cosmetically elegant product suitable for everyday use is Eucerin Intensive Repair, which contains urea (10%) and sodium lactate (5%).

For patients with severe xerosis, products containing 12% ammonium lactate, available in prescription (LacHydrin) and OTC forms (AmLactin) represent excellent products. However, these products are odiferous and may produce a burning sensation when applied, especially if the skin is fissured. Lactic acid and its salt are biologically active and increase the production of hyaluronic acid in the dermis, and normalize keratinization. Hyaluronic acid retains in excess of 1000-fold its weight in water; hence, lactate-containing moisturizers often outperform other products in cases of severe xerosis (Fig. 37.2).

SUNSCREENS

Application of sunscreens

Appropriate counseling regarding sunscreens is rather complex. In general, patients should use sunscreens that are labeled as a *broad-spectrum,* meaning the products provides protection from ultraviolet A (UVA) and ultraviolet B (UVB) light. The label should include the term *water resistant,* which means that it still provides significant coverage after 40 or 80 minutes, as identified on the bottle. The sunscreen protection factor (SPF) indicates protection against UVB only, but products of use should have a rating of 30 or higher. Application is also important. Studies have shown that on average, people apply sunscreen at 50% or less than the concentration at which the SPF was determined. The so-called shot glass rule of sunscreens (Fig. 37.3) is premised on the idea that shot glasses hold about 1 ounce; this is enough sunscreen to cover the face, arms, torso, and legs once. Sunscreen should be reapplied about every 2 hours and even more often with heavy sweating or water exposure.

Fig. 37.3. Shot glass rule.

When to use sunscreens indoors and under clothing

Most patients and health care providers do not understand that UVA, which is involved in photoaging, photosensitive diseases (e.g., lupus erythematosus, most polymorphous light eruptions), and many photoallergic drug eruptions, passes through window glass and most clothing. Fig. 19.38 illustrates UVA-induced tanning in the shape of a butterfly that occurred through the patient's swimsuit. Patients with photosensitive diseases must use broad-based (UVA, UVB blocking) sunscreens to prevent disease activity. Moreover, use is required whether or not the patient plans to go outdoors. Avobenzone is an excellent UVA blocker and is available in many different products, allowing for the patient's preference. The best sunscreen is one that the patient will use. A leading consumer review magazine has recommended "No-Ad Sport SPF 50 Lotion" as an economical and high-performing sunscreen. For those who desire a spray formulation, Equate Sport Continuous Spray has been recommended.

CORTICOSTEROIDS

How much topical corticosteroid do I need to prescribe?

Topical corticosteroids are available in different strengths and formulations. A common error in prescribing is providing too little medication, to treat the area adequately, for the intended duration. The "fingertip unit" (Fig. 37.4), as measured in adults, is about 0.5 g, and it is enough to treat 2% of the total body surface. Thus, if the patient has 10% of his or her body surface involved, and it is intended for him or her to use a topical corticosteroid twice daily for 10 days, one must prescribe at least 50 g of corticosteroid. Another rule of thumb is that it takes 15 g of material to cover

Fig. 37.4. Fingertip unit. (From the John Aeling Collection, Aurora, CO.)

Fig. 37.5. Topical corticosteroid atrophy. (From the William Weston Collection, Aurora, CO.)

the body once, from the neck down. Finally, it is also important to realize that twice-daily use is not twice as effective as once-daily use. It is estimated that a second daily application may provide only 20% to 30% of additional efficacy. In cases of dermatitis or psoriasis that are not severe, once-daily application may have advantages in terms of compliance, lesser risk of overuse, and lower overall cost.

Preventing atrophy from topical corticosteroids

Potent topical corticosteroids can produce atrophy, including epidermal thinning, decreased hyaluronic acid production, reduced collagen fibers, and thinned elastic fibers (striae distensae), after just 1 week of twice-daily use. The patient depicted in Fig. 37.5 developed skin atrophy from prolonged use of betamethasone ointment. An unappreciated prospective study has demonstrated that just 4 weeks' use of topical clobetasol on the forearm, without occlusion, yields a 51% decrease in the thickness of the epidermis and a 47% decrease in hyaluronic acid content. The opposite forearm was treated with topical clobetasol plus twice-daily 12% ammonium lactate. The ammonium lactate-treated site had only a 35% decrease in epidermal thickness and only a 17% decrease in hyaluronic acid content. Moreover, the sites treated with ammonium lactate did not demonstrate decreased melanin production that had been observed in the sites treated with only clobetasol. When anticipating use of potent topical steroids for a skin disorder for a period longer than 2 weeks, concomitant use of 12% ammonium lactate may lessen side effects.

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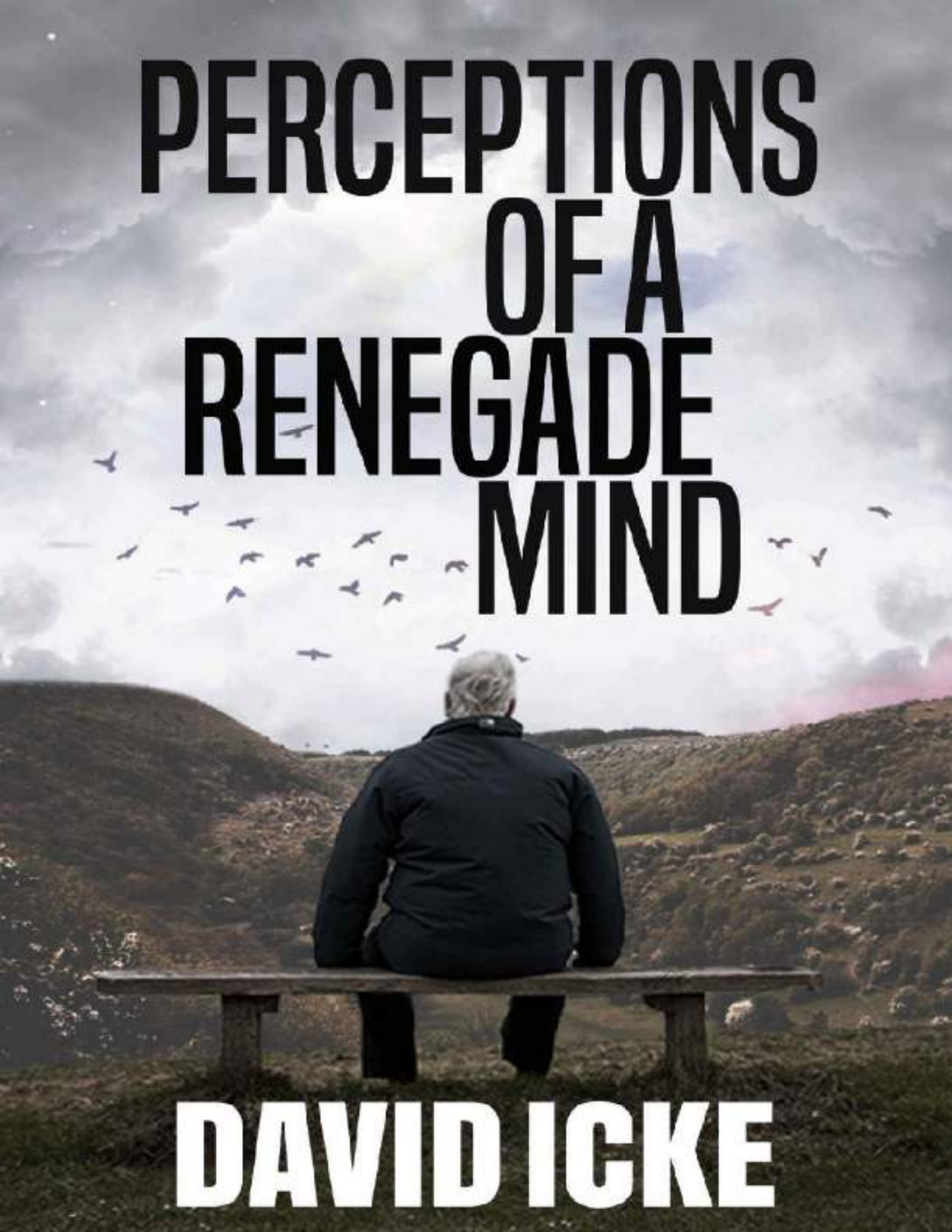

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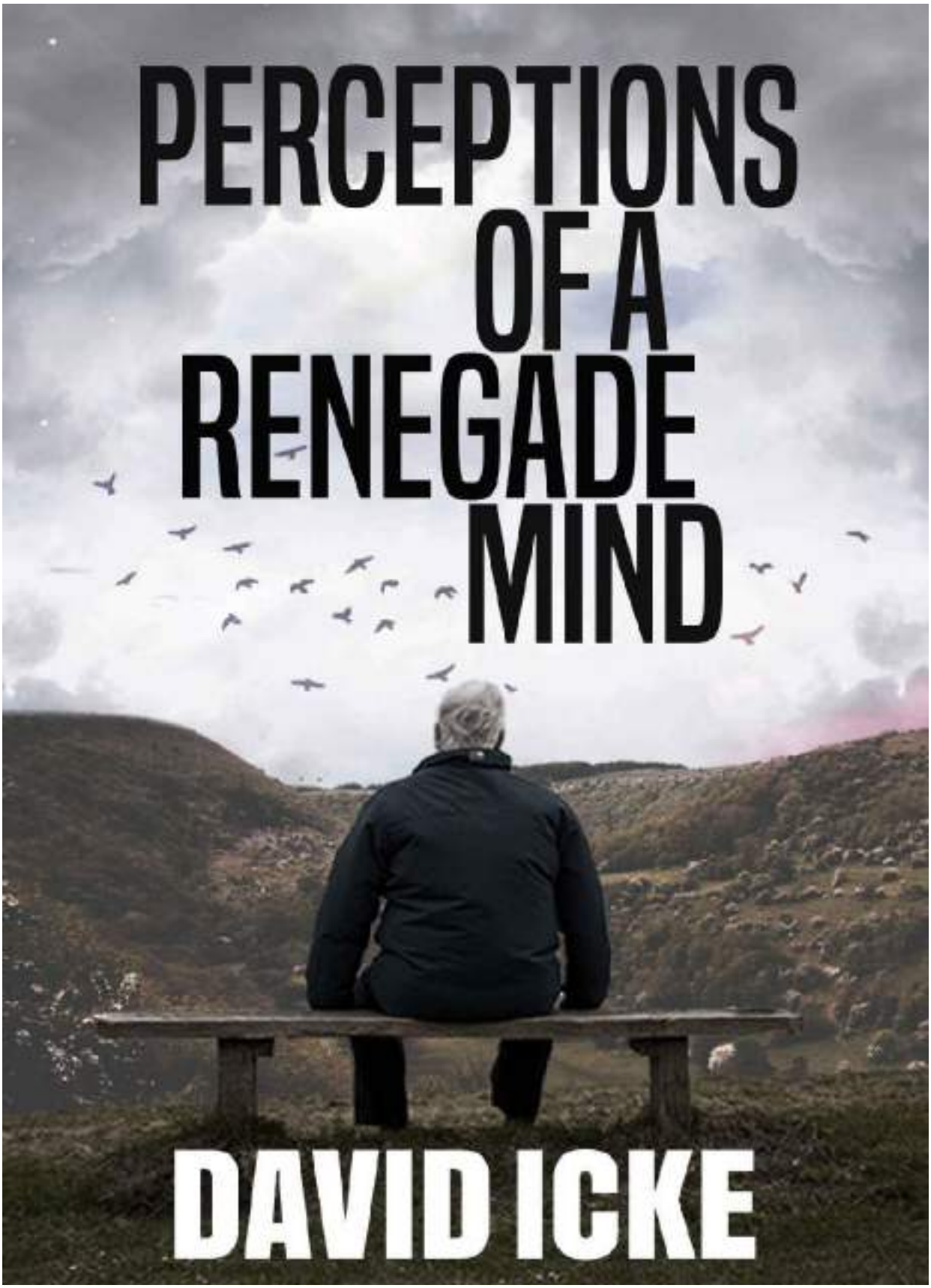
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New Enterprise House
St Helens Street
Derby
DE1 3GY
UK

email: gareth.icke@davidicke.com

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PERCEPTIONS OF A RENEGADE MIND

DAVID ICKE

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Renegade:
Adjective
‘Having rejected tradition: Unconventional.’
Merriam-Webster Dictionary

Acquiescence to tyranny is the death of the spirit

You may be 38 years old, as I happen to be. And one day, some great opportunity stands before you and calls you to stand up for some great principle, some great issue, some great cause. And you refuse to do it because you are afraid … You refuse to do it because you want to live longer … You're afraid that you will lose your job, or you are afraid that you will be criticised or that you will lose your popularity, or you're afraid that somebody will stab you, or shoot at you or bomb your house; so you refuse to take the stand.

Well, you may go on and live until you are 90, but you're just as dead at 38 as you would be at 90. And the cessation of breathing in your life is but the belated announcement of an earlier death of the spirit.

Martin Luther King

How the few control the many and always have – the many do whatever they're told

'Forward, the Light Brigade!'
Was there a man dismayed?
Not though the soldier knew
Someone had blundered.
Theirs not to make reply,
Theirs not to reason why,
Theirs but to do and die.
Into the valley of Death
Rode the six hundred.

Cannon to right of them,
Cannon to left of them,
Cannon in front of them
Volleyed and thundered;
Stormed at with shot and shell,
Boldly they rode and well,
Into the jaws of Death,
Into the mouth of hell
Rode the six hundred

Alfred Lord Tennyson (1809-1892)

The mist is lifting slowly
I can see the way ahead
And I've left behind the empty streets
That once inspired my life
And the strength of the emotion
Is like thunder in the air
'Cos the promise that we made each other
Haunts me to the end

The secret of your beauty
And the mystery of your soul
I've been searching for in everyone I meet
And the times I've been mistaken
It's impossible to say
And the grass is growing
Underneath our feet

The words that I remember
From my childhood still are true
That there's none so blind
As those who will not see
And to those who lack the courage
And say it's dangerous to try
Well they just don't know
That love eternal will not be denied

I know you're out there somewhere
Somewhere, somewhere
I know you're out there somewhere

Somewhere you can hear my voice
I know I'll find you somehow
Somehow, somehow
I know I'll find you somehow
And somehow I'll return again to you

The Moody Blues

Are you a gutless wonder - or a Renegade Mind?

Monuments put from pen to paper,
Turns me into a gutless wonder,
And if you tolerate this,
Then your children will be next.
Gravity keeps my head down,
Or is it maybe shame ...

Manic Street Preachers

Rise like lions after slumber
In unvanquishable number.
Shake your chains to earth like dew
Which in sleep have fallen on you.
Ye are many – they are few.

Percy Shelley

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CHAPTER ONE

I'm thinking' – Oh, but *are* you?

Think for yourself and let others enjoy the privilege of doing so too
Voltaire

French-born philosopher, mathematician and scientist René Descartes became famous for his statement in Latin in the 17th century which translates into English as: 'I think, therefore I am.'

On the face of it that is true. Thought reflects perception and perception leads to both behaviour and self-identity. In that sense 'we' are what we think. But who or what is doing the thinking and is thinking the only route to perception? Clearly, as we shall see, 'we' are not always the source of 'our' perception, indeed with regard to humanity as a whole this is rarely the case; and thinking is far from the only means of perception. Thought is the village idiot compared with other expressions of consciousness that we all have the potential to access and tap into. This has to be true when we *are* those other expressions of consciousness which are infinite in nature. We have forgotten this, or, more to the point, been manipulated to forget.

These are not just the esoteric musings of the navel. The whole foundation of human control and oppression is control of perception. Once perception is hijacked then so is behaviour which is dictated by perception. Collective perception becomes collective behaviour and collective behaviour is what we call human society. Perception is all and those behind human control know that which is

why perception is the target 24/7 of the psychopathic manipulators that I call the Global Cult. They know that if they dictate perception they will dictate behaviour and collectively dictate the nature of human society. They are further aware that perception is formed from information received and if they control the circulation of information they will to a vast extent direct human behaviour. Censorship of information and opinion has become globally Nazi-like in recent years and never more blatantly than since the illusory 'virus pandemic' was triggered out of China in 2019 and across the world in 2020. Why have billions submitted to house arrest and accepted fascistic societies in a way they would have never believed possible? Those controlling the information spewing from government, mainstream media and Silicon Valley (all controlled by the same Global Cult networks) told them they were in danger from a 'deadly virus' and only by submitting to house arrest and conceding their most basic of freedoms could they and their families be protected. This monumental and provable lie became the *perception* of the billions and therefore the *behaviour* of the billions. In those few words you have the whole structure and modus operandi of human control. Fear is a perception – **F**alse **E**motion **A**ppearing **R**eal – and fear is the currency of control. In short … get them by the balls (or give them the impression that you have) and their hearts and minds will follow. Nothing grips the dangly bits and freezes the rear-end more comprehensively than fear.

World number 1

There are two 'worlds' in what appears to be one 'world' and the prime difference between them is knowledge. First we have the mass of human society in which the population is maintained in coldly-calculated ignorance through control of information and the 'education' (indoctrination) system. That's all you really need to control to enslave billions in a perceptual delusion in which what are perceived to be *their* thoughts and opinions are ever-repeated mantras that the system has been downloading all their lives through 'education', media, science, medicine, politics and academia

in which the personnel and advocates are themselves overwhelmingly the perceptual products of the same repetition. Teachers and academics in general are processed by the same programming machine as everyone else, but unlike the great majority they never leave the 'education' program. It gripped them as students and continues to grip them as programmers of subsequent generations of students. The programmed become the programmers – the programmed programmers. The same can largely be said for scientists, doctors and politicians and not least because as the American writer Upton Sinclair said: 'It is difficult to get a man to understand something when his salary depends upon his not understanding it.' If your career and income depend on thinking the way the system demands then you will – bar a few free-minded exceptions – concede your mind to the Perceptual Mainframe that I call the Postage Stamp Consensus. This is a tiny band of perceived knowledge and possibility 'taught' (downloaded) in the schools and universities, pounded out by the mainstream media and on which all government policy is founded. Try thinking, and especially speaking and acting, outside of the 'box' of consensus and see what that does for your career in the Mainstream Everything which bullies, harasses, intimidates and ridicules the population into compliance. Here we have the simple structure which enslaves most of humanity in a perceptual prison cell for an entire lifetime and I'll go deeper into this process shortly. Most of what humanity is taught as fact is nothing more than programmed belief. American science fiction author Frank Herbert was right when he said: 'Belief can be manipulated. Only knowledge is dangerous.' In the 'Covid' age belief is promoted and knowledge is censored. It was always so, but never to the extreme of today.

World number 2

A 'number 2' is slang for 'doing a poo' and how appropriate that is when this other 'world' is doing just that on humanity every minute of every day. World number 2 is a global network of secret societies and semi-secret groups dictating the direction of society via

governments, corporations and authorities of every kind. I have spent more than 30 years uncovering and exposing this network that I call the Global Cult and knowing its agenda is what has made my books so accurate in predicting current and past events. Secret societies are secret for a reason. They want to keep their hoarded knowledge to themselves and their chosen initiates and to hide it from the population which they seek through ignorance to control and subdue. The whole foundation of the division between World 1 and World 2 is *knowledge*. What number 1 knows number 2 must not. Knowledge they have worked so hard to keep secret includes (a) the agenda to enslave humanity in a centrally-controlled global dictatorship, and (b) the nature of reality and life itself. The latter (b) must be suppressed to allow the former (a) to prevail as I shall be explaining. The way the Cult manipulates and interacts with the population can be likened to a spider's web. The 'spider' sits at the centre in the shadows and imposes its will through the web with each strand represented in World number 2 by a secret society, satanic or semi-secret group, and in World number 1 – the world of the seen – by governments, agencies of government, law enforcement, corporations, the banking system, media conglomerates and Silicon Valley (Fig 1 overleaf). The spider and the web connect and coordinate all these organisations to pursue the same global outcome while the population sees them as individual entities working randomly and independently. At the level of the web governments *are* the banking system *are* the corporations *are* the media *are* Silicon Valley *are* the World Health Organization working from their inner cores as one unit. Apparently unconnected countries, corporations, institutions, organisations and people are on the *same team* pursuing the same global outcome. Strands in the web immediately around the spider are the most secretive and exclusive secret societies and their membership is emphatically restricted to the Cult inner-circle emerging through the generations from particular bloodlines for reasons I will come to. At the core of the core you would get them in a single room. That's how many people are dictating the direction of human society and its transformation

through the ‘Covid’ hoax and other means. As the web expands out from the spider we meet the secret societies that many people will be aware of – the Freemasons, Knights Templar, Knights of Malta, Opus Dei, the inner sanctum of the Jesuit Order, and such like. Note how many are connected to the Church of Rome and there is a reason for that. The Roman Church was established as a revamp, a rebranding, of the relocated ‘Church’ of Babylon and the Cult imposing global tyranny today can be tracked back to Babylon and Sumer in what is now Iraq.

Figure 1: The global web through which the few control the many. (Image Neil Hague.)

Inner levels of the web operate in the unseen away from the public eye and then we have what I call the cusp organisations located at the point where the hidden meets the seen. They include a series of satellite organisations answering to a secret society founded in London in the late 19th century called the Round Table and among them are the Royal Institute of International Affairs (UK, founded in 1920); Council on Foreign Relations (US, 1921); Bilderberg Group (worldwide, 1954); Trilateral Commission (US/worldwide, 1972); and the Club of Rome (worldwide, 1968) which was created to exploit environmental concerns to justify the centralisation of global power to ‘save the planet’. The Club of Rome instigated with others the human-caused climate change hoax which has led to all the ‘green

new deals' demanding that very centralisation of control. Cusp organisations, which include endless 'think tanks' all over the world, are designed to coordinate a single global policy between political and business leaders, intelligence personnel, media organisations and anyone who can influence the direction of policy in their own sphere of operation. Major players and regular attenders will know what is happening – or some of it – while others come and go and are kept overwhelmingly in the dark about the big picture. I refer to these cusp groupings as semi-secret in that they can be publicly identified, but what goes on at the inner-core is kept very much 'in house' even from most of their members and participants through a fiercely-imposed system of compartmentalisation. Only let them know what they need to know to serve your interests and no more. The structure of secret societies serves as a perfect example of this principle. Most Freemasons never get higher than the bottom three levels of 'degree' (degree of knowledge) when there are 33 official degrees of the Scottish Rite. Initiates only qualify for the next higher 'compartment' or degree if those at that level choose to allow them. Knowledge can be carefully assigned only to those considered 'safe'. I went to my local Freemason's lodge a few years ago when they were having an 'open day' to show how cuddly they were and when I chatted to some of them I was astonished at how little the rank and file knew even about the most ubiquitous symbols they use. The mushroom technique – keep them in the dark and feed them bullshit – applies to most people in the web as well as the population as a whole. Sub-divisions of the web mirror in theme and structure transnational corporations which have a headquarters somewhere in the world dictating to all their subsidiaries in different countries. Subsidiaries operate in their methodology and branding to the same centrally-dictated plan and policy in pursuit of particular ends. The Cult web functions in the same way. Each country has its own web as a subsidiary of the global one. They consist of networks of secret societies, semi-secret groups and bloodline families and their job is to impose the will of the spider and the global web in their particular country. Subsidiary networks control and manipulate the national political system, finance, corporations, media, medicine, etc. to

ensure that they follow the globally-dictated Cult agenda. These networks were the means through which the 'Covid' hoax could be played out with almost every country responding in the same way.

The 'Yessir' pyramid

Compartmentalisation is the key to understanding how a tiny few can dictate the lives of billions when combined with a top-down sequence of imposition and acquiescence. The inner core of the Cult sits at the peak of the pyramidal hierarchy of human society (Fig 2 overleaf). It imposes its will – its agenda for the world – on the level immediately below which acquiesces to that imposition. This level then imposes the Cult will on the level below them which acquiesces and imposes on the next level. Very quickly we meet levels in the hierarchy that have no idea there even is a Cult, but the sequence of imposition and acquiescence continues down the pyramid in just the same way. 'I don't know why we are doing this but the order came from "on-high" and so we better just do it.' Alfred Lord Tennyson said of the cannon fodder levels in his poem *The Charge of the Light Brigade*: 'Theirs not to reason why; theirs but to do and die.' The next line says that 'into the valley of death rode the six hundred' and they died because they obeyed without question what their perceived 'superiors' told them to do. In the same way the population capitulated to 'Covid'. The whole hierarchical pyramid functions like this to allow the very few to direct the enormous many. Eventually imposition-acquiescence-imposition-acquiescence comes down to the mass of the population at the foot of the pyramid. If they acquiesce to those levels of the hierarchy imposing on them (governments/law enforcement/doctors/media) a circuit is completed between the population and the handful of super-psychopaths in the Cult inner core at the top of the pyramid. Without a circuit-breaking refusal to obey, the sequence of imposition and acquiescence allows a staggeringly few people to impose their will upon the entirety of humankind. We are looking at the very sequence that has subjugated billions since the start of 2020. Our freedom has not been taken from us. Humanity has given it

away. Fascists do not impose fascism because there are not enough of them. Fascism is imposed by the population acquiescing to fascism. Put another way allowing their perceptions to be programmed to the extent that leads to the population giving their freedom away by giving their perceptions – their mind – away. If this circuit is not broken by humanity ceasing to cooperate with their own enslavement then nothing can change. For that to happen people have to critically think and see through the lies and window dressing and then summon the backbone to act upon what they see. The Cult spends its days working to stop either happening and its methodology is systematic and highly detailed, but it can be overcome and that is what this book is all about.

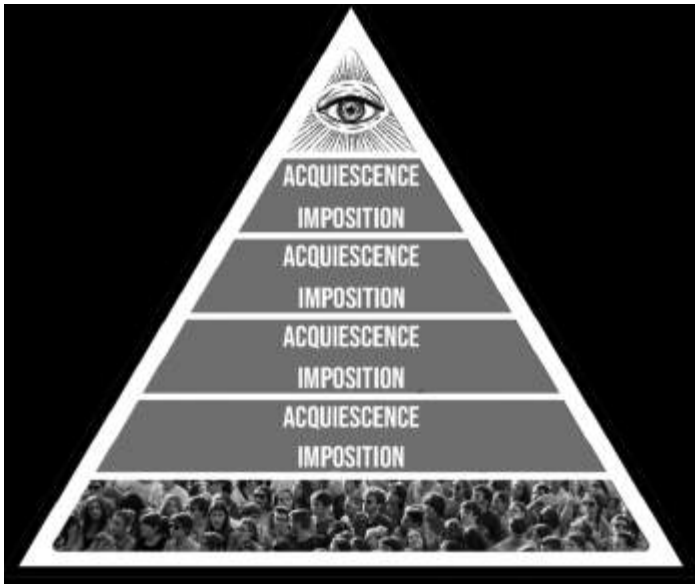

Figure 2: The simple sequence of imposition and compliance that allows a handful of people at the peak of the pyramid to dictate the lives of billions.

The Life Program

Okay, back to world number 1 or the world of the 'masses'. Observe the process of what we call 'life' and it is a perceptual download from cradle to grave. The Cult has created a global structure in which perception can be programmed and the program continually topped-up with what appears to be constant confirmation that the program is indeed true reality. The important word here is 'appears'.

This is the structure, the fly-trap, the Postage Stamp Consensus or Perceptual Mainframe, which represents that incredibly narrow band of perceived possibility delivered by the 'education' system, mainstream media, science and medicine. From the earliest age the download begins with parents who have themselves succumbed to the very programming their children are about to go through. Most parents don't do this out of malevolence and mostly it is quite the opposite. They do what they believe is best for their children and that is what the program has told them is best. Within three or four years comes the major transition from parental programming to full-blown state (Cult) programming in school, college and university where perceptually-programmed teachers and academics pass on their programming to the next generations. Teachers who resist are soon marginalised and their careers ended while children who resist are called a problem child for whom Ritalin may need to be prescribed. A few years after entering the 'world' children are under the control of authority figures representing the state telling them when they have to be there, when they can leave and when they can speak, eat, even go to the toilet. This is calculated preparation for a lifetime of obeying authority in all its forms. Reflex-action fear of authority is instilled by authority from the start. Children soon learn the carrot and stick consequences of obeying or defying authority which is underpinned daily for the rest of their life. Fortunately I daydreamed through this crap and never obeyed authority simply because it told me to. This approach to my alleged 'betters' continues to this day. There can be consequences of pursuing open-minded freedom in a world of closed-minded conformity. I spent a lot of time in school corridors after being ejected from the classroom for not taking some of it seriously and now I spend a lot of time being ejected from Facebook, YouTube and Twitter. But I can tell you that being true to yourself and not compromising your self-respect is far more exhilarating than bowing to authority for authority's sake. You don't have to be a sheep to the shepherd (authority) and the sheep dog (fear of not obeying authority).

The perceptual download continues throughout the formative years in school, college and university while script-reading 'teachers', 'academics' 'scientists', 'doctors' and 'journalists' insist that ongoing generations must be as programmed as they are. Accept the program or you will not pass your 'exams' which confirm your 'degree' of programming. It is tragic to think that many parents pressure their offspring to work hard at school to download the program and qualify for the next stage at college and university. The late, great, American comedian George Carlin said: 'Here's a bumper sticker I'd like to see: We are proud parents of a child who has resisted his teachers' attempts to break his spirit and bend him to the will of his corporate masters.' Well, the best of luck finding many of those, George. Then comes the moment to leave the formal programming years in academia and enter the 'adult' world of work. There you meet others in your chosen or prescribed arena who went through the same Postage Stamp Consensus program before you did. There is therefore overwhelming agreement between almost everyone on the basic foundations of Postage Stamp reality and the rejection, even contempt, of the few who have a mind of their own and are prepared to use it. This has two major effects. Firstly, the consensus confirms to the programmed that their download is really how things are. I mean, everyone knows that, right? Secondly, the arrogance and ignorance of Postage Stamp adherents ensure that anyone questioning the program will have unpleasant consequences for seeking their own truth and not picking their perceptions from the shelf marked: 'Things you must believe without question and if you don't you're a dangerous lunatic conspiracy theorist and a harebrained nutter'.

Every government, agency and corporation is founded on the same Postage Stamp prison cell and you can see why so many people believe the same thing while calling it their own 'opinion'. Fusion of governments and corporations in pursuit of the same agenda was the definition of fascism described by Italian dictator Benito Mussolini. The pressure to conform to perceptual norms downloaded for a lifetime is incessant and infiltrates society right

down to family groups that become censors and condemners of their own 'black sheep' for not, ironically, being sheep. We have seen an explosion of that in the 'Covid' era. Cult-owned global media unleashes its propaganda all day every day in support of the Postage Stamp and targets with abuse and ridicule anyone in the public eye who won't bend their mind to the will of the tyranny. Any response to this is denied (certainly in my case). They don't want to give a platform to expose official lies. Cult-owned-and-created Internet giants like Facebook, Google, YouTube and Twitter delete you for having an unapproved opinion. Facebook boasts that its AI censors delete 97-percent of 'hate speech' before anyone even reports it. Much of that 'hate speech' will simply be an opinion that Facebook and its masters don't want people to see. Such perceptual oppression is widely known as fascism. Even Facebook executive Benny Thomas, a 'CEO Global Planning Lead', said in comments secretly recorded by investigative journalism operation Project Veritas that Facebook is 'too powerful' and should be broken up:

I mean, no king in history has been the ruler of two billion people, but Mark Zuckerberg is … And he's 36. That's too much for a 36-year-old ... You should not have power over two billion people. I just think that's wrong.

Thomas said Facebook-owned platforms like Instagram, Oculus, and WhatsApp needed to be separate companies. 'It's too much power when they're all one together'. That's the way the Cult likes it, however. We have an executive of a Cult organisation in Benny Thomas that doesn't know there is a Cult such is the compartmentalisation. Thomas said that Facebook and Google 'are no longer companies, they're countries'. Actually they are more powerful than countries on the basis that if you control information you control perception and control human society.

I love my oppressor

Another expression of this psychological trickery is for those who realise they are being pressured into compliance to eventually

convince themselves to believe the official narratives to protect their self-respect from accepting the truth that they have succumbed to meek and subservient compliance. Such people become some of the most vehement defenders of the system. You can see them everywhere screaming abuse at those who prefer to think for themselves and by doing so reminding the compliers of their own capitulation to conformity. 'You are talking dangerous nonsense you Covidiot!!' Are you trying to convince me or yourself? It is a potent form of Stockholm syndrome which is defined as: 'A psychological condition that occurs when a victim of abuse identifies and attaches, or bonds, positively with their abuser.' An example is hostages bonding and even 'falling in love' with their kidnappers. The syndrome has been observed in domestic violence, abused children, concentration camp inmates, prisoners of war and many and various Satanic cults. These are some traits of Stockholm syndrome listed at goodtherapy.org:

- Positive regard towards perpetrators of abuse or captor [see 'Covid'].
- Failure to cooperate with police and other government authorities when it comes to holding perpetrators of abuse or kidnapping accountable [or in the case of 'Covid' cooperating with the police to enforce and defend their captors' demands].
- Little or no effort to escape [see 'Covid'].
- Belief in the goodness of the perpetrators or kidnappers [see 'Covid'].
- Appeasement of captors. This is a manipulative strategy for maintaining one's safety. As victims get rewarded – perhaps with less abuse or even with life itself – their appeasing behaviours are reinforced [see 'Covid'].
- Learned helplessness. This can be akin to 'if you can't beat 'em, join 'em'. As the victims fail to escape the abuse or captivity, they may start giving up and soon realize it's just easier for everyone if they acquiesce all their power to their captors [see 'Covid'].

- Feelings of pity toward the abusers, believing they are actually victims themselves. Because of this, victims may go on a crusade or mission to 'save' [protect] their abuser [see the venom unleashed on those challenging the official 'Covid' narrative].
- Unwillingness to learn to detach from their perpetrators and heal. In essence, victims may tend to be less loyal to themselves than to their abuser [*definitely* see 'Covid'].

Ponder on those traits and compare them with the behaviour of great swathes of the global population who have defended governments and authorities which have spent every minute destroying their lives and livelihoods and those of their children and grandchildren since early 2020 with fascistic lockdowns, house arrest and employment deletion to 'protect' them from a 'deadly virus' that their abusers' perceptually created to bring about this very outcome. We are looking at mass Stockholm syndrome. All those that agree to concede their freedom will believe those perceptions are originating in their own independent 'mind' when in fact by conceding their reality to Stockholm syndrome they have by definition conceded any independence of mind. Listen to the 'opinions' of the acquiescing masses in this 'Covid' era and what gushes forth is the repetition of the official version of everything delivered unprocessed, unfiltered and unquestioned. The whole programming dynamic works this way. I must be free because I'm told that I am and so I think that I am.

You can see what I mean with the chapter theme of 'I'm thinking – Oh, but *are* you?' The great majority are not thinking, let alone for themselves. They are repeating what authority has told them to believe which allows them to be controlled. Weaving through this mentality is the fear that the 'conspiracy theorists' are right and this again explains the often hysterical abuse that ensues when you dare to contest the official narrative of anything. Denial is the mechanism of hiding from yourself what you don't want to be true. Telling people what they want to hear is easy, but it's an infinitely greater challenge to tell them what they would rather not be happening.

One is akin to pushing against an open door while the other is met with vehement resistance no matter what the scale of evidence. I don't want it to be true so I'll convince myself that it's not. Examples are everywhere from the denial that a partner is cheating despite all the signs to the reflex-action rejection of any idea that world events in which country after country act in exactly the same way are centrally coordinated. To accept the latter is to accept that a force of unspeakable evil is working to destroy your life and the lives of your children with nothing too horrific to achieve that end. Who the heck wants that to be true? But if we don't face reality the end is duly achieved and the consequences are far worse and ongoing than breaking through the walls of denial today with the courage to make a stand against tyranny.

Connect the dots – but how?

A crucial aspect of perceptual programming is to portray a world in which everything is random and almost nothing is connected to anything else. Randomness cannot be coordinated by its very nature and once you perceive events as random the idea they could be connected is waved away as the rantings of the tinfoil-hat brigade. You can't plan and coordinate random you idiot! No, you can't, but you can hide the coldly-calculated and long-planned behind the *illusion* of randomness. A foundation manifestation of the Renegade Mind is to scan reality for patterns that connect the apparently random and turn pixels and dots into pictures. This is the way I work and have done so for more than 30 years. You look for similarities in people, modus operandi and desired outcomes and slowly, then ever quicker, the picture forms. For instance: There would seem to be no connection between the 'Covid pandemic' hoax and the human-caused global-warming hoax and yet they are masks (appropriately) on the same face seeking the same outcome. Those pushing the global warming myth through the Club of Rome and other Cult agencies are driving the lies about 'Covid' – Bill Gates is an obvious one, but they are endless. Why would the same people be involved in both when they are clearly not connected? Oh, but they

are. Common themes with personnel are matched by common goals. The 'solutions' to both 'problems' are centralisation of global power to impose the will of the few on the many to 'save' humanity from 'Covid' and save the planet from an 'existential threat' (we need 'zero Covid' and 'zero carbon emissions'). These, in turn, connect with the 'dot' of globalisation which was coined to describe the centralisation of global power in every area of life through incessant political and corporate expansion, trading blocks and superstates like the European Union. If you are the few and you want to control the many you have to centralise power and decision-making. The more you centralise power the more power the few at the centre will have over the many; and the more that power is centralised the more power those at the centre have to centralise even quicker. The momentum of centralisation gets faster and faster which is exactly the process we have witnessed. In this way the hoaxed 'pandemic' and the fakery of human-caused global warming serve the interests of globalisation and the seizure of global power in the hands of the Cult inner-circle which is behind 'Covid', 'climate change' *and* globalisation. At this point random 'dots' become a clear and obvious picture or pattern.

Klaus Schwab, the classic Bond villain who founded the Cult's Gates-funded World Economic Forum, published a book in 2020, *The Great Reset*, in which he used the 'problem' of 'Covid' to justify a total transformation of human society to 'save' humanity from 'climate change'. Schwab said: 'The pandemic represents a rare but narrow window of opportunity to reflect, reimagine, and reset our world.' What he didn't mention is that the Cult he serves is behind both hoaxes as I show in my book *The Answer*. He and the Cult don't have to reimagine the world. They know precisely what they want and that's why they destroyed human society with 'Covid' to 'build back better' in their grand design. Their job is not to imagine, but to get humanity to imagine and agree with their plans while believing it's all random. It must be pure coincidence that 'The Great Reset' has long been the Cult's code name for the global imposition of fascism and replaced previous code-names of the 'New World

Order' used by Cult frontmen like Father George Bush and the 'New Order of the Ages' which emerged from Freemasonry and much older secret societies. New Order of the Ages appears on the reverse of the Great Seal of the United States as 'Novus ordo seclorum' underneath the Cult symbol used since way back of the pyramid and all seeing-eye (Fig 3). The pyramid is the hierarchy of human control headed by the illuminated eye that symbolises the force behind the Cult which I will expose in later chapters. The term 'Annuit Coeptis' translates as 'He favours our undertaking'. We are told the 'He' is the Christian god, but 'He' is not as I will be explaining.

Figure 3: The all-seeing eye of the Cult 'god' on the Freemason-designed Great Seal of the United States and also on the dollar bill.

Having you on

Two major Cult techniques of perceptual manipulation that relate to all this are what I have called since the 1990s Problem-Reaction-Solution (PRS) and the Totalitarian Tiptoe (TT). They can be uncovered by the inquiring mind with a simple question: Who benefits? The answer usually identifies the perpetrators of a given action or happening through the concept of 'he who most benefits from a crime is the one most likely to have committed it'. The Latin 'Cue bono?' – Who benefits? – is widely attributed to the Roman orator and statesman Marcus Tullius Cicero. No wonder it goes back so far when the concept has been relevant to human behaviour since

history was recorded. Problem-Reaction-Solution is the technique used to manipulate us every day by covertly creating a problem (or the illusion of one) and offering the solution to the problem (or the illusion of one). In the first phase you create the problem and blame someone or something else for why it has happened. This may relate to a financial collapse, terrorist attack, war, global warming or pandemic, anything in fact that will allow you to impose the 'solution' to change society in the way you desire at that time. The 'problem' doesn't have to be real. PRS is manipulation of perception and all you need is the population to believe the problem is real. Human-caused global warming and the 'Covid pandemic' only have to be *perceived* to be real for the population to accept the 'solutions' of authority. I refer to this technique as NO-Problem-Reaction-Solution. Billions did not meekly accept house arrest from early 2020 because there was a real deadly 'Covid pandemic' but because they perceived – believed – that to be the case. The antidote to Problem-Reaction-Solution is to ask who benefits from the proposed solution. Invariably it will be anyone who wants to justify more control through deletion of freedom and centralisation of power and decision-making.

The two world wars were Problem-Reaction-Solutions that transformed and realigned global society. Both were manipulated into being by the Cult as I have detailed in books since the mid-1990s. They dramatically centralised global power, especially World War Two, which led to the United Nations and other global bodies thanks to the overt and covert manipulations of the Rockefeller family and other Cult bloodlines like the Rothschilds. The UN is a stalking horse for full-blown world government that I will come to shortly. The land on which the UN building stands in New York was donated by the Rockefellers and the same Cult family was behind Big Pharma scalpel and drug 'medicine' and the creation of the World Health Organization as part of the UN. They have been stalwarts of the eugenics movement and funded Hitler's race-purity expert' Ernst Rudin. The human-caused global warming hoax has been orchestrated by the Club of Rome through the UN which is

manufacturing both the 'problem' through its Intergovernmental Panel on Climate Change and imposing the 'solution' through its Agenda 21 and Agenda 2030 which demand the total centralisation of global power to 'save the world' from a climate hoax the United Nations is itself perpetrating. What a small world the Cult can be seen to be particularly among the inner circles. The bedfellow of Problem-Reaction-Solution is the Totalitarian Tiptoe which became the Totalitarian Sprint in 2020. The technique is fashioned to hide the carefully-coordinated behind the cover of apparently random events. You start the sequence at 'A' and you know you are heading for 'Z'. You don't want people to know that and each step on the journey is presented as a random happening while all the steps strung together lead in the same direction. The speed may have quickened dramatically in recent times, but you can still see the incremental approach of the Tiptoe in the case of 'Covid' as each new imposition takes us deeper into fascism. Tell people they have to do this or that to get back to 'normal', then this and this and this. With each new demand adding to the ones that went before the population's freedom is deleted until it disappears. The spider wraps its web around the flies more comprehensively with each new diktat. I'll highlight this in more detail when I get to the 'Covid' hoax and how it has been pulled off. Another prime example of the Totalitarian Tiptoe is how the Cult-created European Union went from a 'free-trade zone' to a centralised bureaucratic dictatorship through the Tiptoe of incremental centralisation of power until nations became mere administrative units for Cult-owned dark suits in Brussels.

The antidote to ignorance is knowledge which the Cult seeks vehemently to deny us, but despite the systematic censorship to that end the Renegade Mind can overcome this by vociferously seeking out the facts no matter the impediments put in the way. There is also a method of thinking and perceiving – *knowing* – that doesn't even need names, dates, place-type facts to identify the patterns that reveal the story. I'll get to that in the final chapter. All you need to know about the manipulation of human society and to what end is still out there – *at the time of writing* – in the form of books, videos

and websites for those that really want to breach the walls of programmed perception. To access this knowledge requires the abandonment of the mainstream media as a source of information in the awareness that this is owned and controlled by the Cult and therefore promotes mass perceptions that suit the Cult. Mainstream media lies all day, every day. That is its function and very reason for being. Where it does tell the truth, here and there, is only because the truth and the Cult agenda very occasionally coincide. If you look for fact and insight to the BBC, CNN and virtually all the rest of them you are asking to be conned and perceptually programmed.

Know the outcome and you'll see the journey

Events seem random when you have no idea where the world is being taken. Once you do the random becomes the carefully planned. Know the outcome and you'll see the journey is a phrase I have been using for a long time to give context to daily happenings that appear unconnected. Does a problem, or illusion of a problem, trigger a proposed 'solution' that further drives society in the direction of the outcome? Invariably the answer will be yes and the random – *abracadabra* – becomes the clearly coordinated. So what is this outcome that unlocks the door to a massively expanded understanding of daily events? I will summarise its major aspects – the fine detail is in my other books – and those new to this information will see that the world they thought they were living in is a very different place. The foundation of the Cult agenda is the incessant centralisation of power and all such centralisation is ultimately in pursuit of Cult control on a global level. I have described for a long time the planned world structure of top-down dictatorship as the Hunger Games Society. The term obviously comes from the movie series which portrayed a world in which a few living in military-protected hi-tech luxury were the overlords of a population condemned to abject poverty in isolated 'sectors' that were not allowed to interact. 'Covid' lockdowns and travel bans anyone? The 'Hunger Games' pyramid of structural control has the inner circle of the Cult at the top with pretty much the entire

population at the bottom under their control through dependency for survival on the Cult. The whole structure is planned to be protected and enforced by a military-police state (Fig 4).

Here you have the reason for the global lockdowns of the fake pandemic to coldly destroy independent incomes and livelihoods and make everyone dependent on the 'state' (the Cult that controls the 'states'). I have warned in my books for many years about the plan to introduce a 'guaranteed income' – a barely survivable pittance – designed to impose dependency when employment was destroyed by AI technology and now even more comprehensively at great speed by the 'Covid' scam. Once the pandemic was played and lockdown consequences began to delete independent income the authorities began to talk right on cue about the need for a guaranteed income and a 'Great Reset'. Guaranteed income will be presented as benevolent governments seeking to help a desperate people – desperate as a direct result of actions of the same governments. The truth is that such payments are a trap. You will only get them if you do exactly what the authorities demand including mass vaccination (genetic manipulation). We have seen this theme already in Australia where those dependent on government benefits have them reduced if parents don't agree to have their children vaccinated according to an insane health-destroying government-dictated schedule. Calculated economic collapse applies to governments as well as people. The Cult wants rid of countries through the creation of a world state with countries broken up into regions ruled by a world government and super states like the European Union. Countries must be bankrupted, too, to this end and it's being achieved by the trillions in 'rescue packages' and furlough payments, trillions in lost taxation, and money-no-object spending on 'Covid' including constant all-medium advertising (programming) which has made the media dependent on government for much of its income. The day of reckoning is coming – as planned – for government spending and given that it has been made possible by printing money and not by production/taxation there is inflation on the way that has the

potential to wipe out monetary value. In that case there will be no need for the Cult to steal your money. It just won't be worth anything (see the German Weimar Republic before the Nazis took over). Many have been okay with lockdowns while getting a percentage of their income from so-called furlough payments without having to work. Those payments are dependent, however, on people having at least a theoretical job with a business considered non-essential and ordered to close. As these business go under because they are closed by lockdown after lockdown the furlough stops and it will for everyone eventually. Then what? The 'then what?' is precisely the idea.

THE COVID-19 CREATED HUNGER GAMES SOCIETY
THE ELITE - 1%
THE GLOBAL POLICE STATE
MANDATORY VACCINATION - ID - SOCIAL CREDIT - 666
CLOSED
FOOD BANK
THE MASSES LIVING IN POVERTY

Figure 4: The Hunger Games Society structure I have long warned was planned and now the 'Covid' hoax has made it possible. This is the real reason for lockdowns.

Hired hands

Between the Hunger Games Cult elite and the dependent population is planned to be a vicious military-police state (a fusion of the two into one force). This has been in the making for a long time with police looking ever more like the military and carrying weapons to match. The pandemic scam has seen this process accelerate so fast as

lockdown house arrest is brutally enforced by carefully recruited fascist minds and gormless system-servers. The police and military are planned to merge into a centrally-directed world army in a global structure headed by a world government which wouldn't be elected even by the election fixes now in place. The world army is not planned even to be human and instead wars would be fought, primarily against the population, using robot technology controlled by artificial intelligence. I have been warning about this for decades and now militaries around the world are being transformed by this very AI technology. The global regime that I describe is a particular form of fascism known as a technocracy in which decisions are not made by clueless and co-opted politicians but by unelected technocrats – scientists, engineers, technologists and bureaucrats. Cult-owned-and-controlled Silicon Valley giants are examples of technocracy and they already have far more power to direct world events than governments. They are with their censorship *selecting* governments. I know that some are calling the 'Great Reset' a Marxist communist takeover, but fascism and Marxism are different labels for the same tyranny. Tell those who lived in fascist Germany and Stalinist Russia that there was a difference in the way their freedom was deleted and their lives controlled. I could call it a fascist technocracy or a Marxist technocracy and they would be equally accurate. The Hunger Games society with its world government structure would oversee a world army, world central bank and single world cashless currency imposing its will on a microchipped population (Fig 5). Scan its different elements and see how the illusory pandemic is forcing society in this very direction at great speed. Leaders of 23 countries and the World Health Organization (WHO) backed the idea in March, 2021, of a global treaty for 'international cooperation' in 'health emergencies' and nations should 'come together as a global community for peaceful cooperation that extends beyond this crisis'. Cut the Orwellian bullshit and this means another step towards global government. The plan includes a cashless digital money system that I first warned about in 1993. Right at the start of 'Covid' the deeply corrupt Tedros

Adhanom Ghebreyesus, the crooked and merely gofer 'head' of the World Health Organization, said it was possible to catch the 'virus' by touching cash and it was better to use cashless means. The claim was ridiculous nonsense and like the whole 'Covid' mind-trick it was nothing to do with 'health' and everything to do with pushing every aspect of the Cult agenda. As a result of the Tedros lie the use of cash has plummeted. The Cult script involves a single world digital currency that would eventually be technologically embedded in the body. China is a massive global centre for the Cult and if you watch what is happening there you will know what is planned for everywhere. The Chinese government is developing a digital currency which would allow fines to be deducted immediately via AI for anyone caught on camera breaking its fantastic list of laws and the money is going to be programmable with an expiry date to ensure that no one can accrue wealth except the Cult and its operatives.

WORLD GOVERNMENT
UNELECTED - RUN BY TECHNOCRATS
WORLD ARMY • CENTRAL BANK • CURRENCY •
HUMANS CONNECTED TO A.I.
SUPERSTATES LIKE THE EU AND CENTRALLY
CONTROLLED 'TRADING BLOCS'
COUNTRIES REPLACED BY POWERLESS REGIONS
GLOBAL MONOCULTURE
THE PEOPLE

Figure 5: The structure of global control the Cult has been working towards for so long and this has been enormously advanced by the 'Covid' illusion.

Serfdom is so smart

The Cult plan is far wider, extreme, and more comprehensive than even most conspiracy researchers appreciate and I will come to the true depths of deceit and control in the chapters 'Who controls the

Cult?' and 'Escaping Wetiko'. Even the world that we know is crazy enough. We are being deluged with ever more sophisticated and controlling technology under the heading of 'smart'. We have smart televisions, smart meters, smart cards, smart cars, smart driving, smart roads, smart pills, smart patches, smart watches, smart skin, smart borders, smart pavements, smart streets, smart cities, smart communities, smart environments, smart growth, smart planet ... smart *everything* around us. Smart technologies and methods of operation are designed to interlock to create a global Smart Grid connecting the entirety of human society including human minds to create a centrally-dictated 'hive' mind. 'Smart cities' is code for densely-occupied megacities of total surveillance and control through AI. Ever more destructive frequency communication systems like 5G have been rolled out without any official testing for health and psychological effects (colossal). 5G/6G/7G systems are needed to run the Smart Grid and each one becomes more destructive of body and mind. Deleting independent income is crucial to forcing people into these AI-policed prisons by ending private property ownership (except for the Cult elite). The Cult's Great Reset now openly foresees a global society in which no one will own any possessions and everything will be rented while the Cult would own literally everything under the guise of government and corporations. The aim has been to use the lockdowns to destroy sources of income on a mass scale and when the people are destitute and in unrepayable amounts of debt (problem) Cult assets come forward with the pledge to write-off debt in return for handing over all property and possessions (solution). Everything – literally everything including people – would be connected to the Internet via AI. I was warning years ago about the coming Internet of Things (IoT) in which all devices and technology from your car to your fridge would be plugged into the Internet and controlled by AI. Now we are already there with much more to come. The next stage is the Internet of Everything (IoE) which is planned to include the connection of AI to the human brain and body to replace the human mind with a centrally-controlled AI mind. Instead of perceptions

being manipulated through control of information and censorship those perceptions would come direct from the Cult through AI. What do you think? You think whatever AI decides that you think. In human terms there would be no individual 'think' any longer. Too incredible? The ravings of a lunatic? Not at all. Cult-owned crazies in Silicon Valley have been telling us the plan for years without explaining the real motivation and calculated implications. These include Google executive and 'futurist' Ray Kurzweil who highlights the year 2030 for when this would be underway. He said:

Our thinking ... will be a hybrid of biological and non-biological thinking ... humans will be able to extend their limitations and 'think in the cloud' ... We're going to put gateways to the cloud in our brains ... We're going to gradually merge and enhance ourselves ... In my view, that's the nature of being human – we transcend our limitations.

As the technology becomes vastly superior to what we are then the small proportion that is still human gets smaller and smaller and smaller until it's just utterly negligible.

The sales-pitch of Kurzweil and Cult-owned Silicon Valley is that this would make us 'super-human' when the real aim is to make us post-human and no longer 'human' in the sense that we have come to know. The entire global population would be connected to AI and become the centrally-controlled 'hive-mind' of externally-delivered perceptions. The Smart Grid being installed to impose the Cult's will on the world is being constructed to allow particular locations – even one location – to control the whole global system. From these prime control centres, which absolutely include China and Israel, anything connected to the Internet would be switched on or off and manipulated at will. Energy systems could be cut, communication via the Internet taken down, computer-controlled driverless autonomous vehicles driven off the road, medical devices switched off, the potential is limitless given how much AI and Internet connections now run human society. We have seen nothing yet if we allow this to continue. Autonomous vehicle makers are working with law enforcement to produce cars designed to automatically pull over if they detect a police or emergency vehicle flashing from up to 100 feet away. At a police stop the car would be unlocked and the

window rolled down automatically. Vehicles would only take you where the computer (the state) allowed. The end of petrol vehicles and speed limiters on all new cars in the UK and EU from 2022 are steps leading to electric computerised transport over which ultimately you have no control. The picture is far bigger even than the Cult global network or web and that will become clear when I get to the nature of the 'spider'. There is a connection between all these happenings and the instigation of DNA-manipulating 'vaccines' (which aren't 'vaccines') justified by the 'Covid' hoax. That connection is the unfolding plan to transform the human body from a biological to a synthetic biological state and this is why synthetic biology is such a fast-emerging discipline of mainstream science. 'Covid vaccines' are infusing self-replicating synthetic genetic material into the cells to cumulatively take us on the Totalitarian Tiptoe from Human 1.0 to the synthetic biological Human 2.0 which will be physically and perceptually attached to the Smart Grid to one hundred percent control every thought, perception and deed. Humanity needs to wake up and *fast*.

This is the barest explanation of where the 'outcome' is planned to go but it's enough to see the journey happening all around us. Those new to this information will already see 'Covid' in a whole new context. I will add much more detail as we go along, but for the minutiae evidence see my mega-works, *The Answer, The Trigger* and *Everything You Need to Know But Have Never Been Told*.

Now – how does a Renegade Mind see the 'world'?

CHAPTER TWO

Renegade Perception

It is one thing to be clever and another to be wise
George R.R. Martin

A simple definition of the difference between a programmed mind and a Renegade Mind would be that one sees only dots while the other connects them to see the picture. Reading reality with accuracy requires the observer to (a) know the planned outcome and (b) realise that everything, but *everything*, is connected.

The entirety of infinite reality is connected – that's its very nature – and with human society an expression of infinite reality the same must apply. Simple cause and effect is a connection. The effect is triggered by the cause and the effect then becomes the cause of another effect. Nothing happens in isolation because it *can't*. Life in whatever reality is simple choice and consequence. We make choices and these lead to consequences. If we don't like the consequences we can make different choices and get different consequences which lead to other choices and consequences. The choice and the consequence are not only connected they are indivisible. You can't have one without the other as an old song goes. A few cannot control the world unless those being controlled allow that to happen – cause and effect, choice and consequence. Control – who has it and who doesn't – is a two-way process, a symbiotic relationship, involving the controller and controlled. 'They took my freedom away!!' Well, yes, but you also gave it to them. Humanity is

subjected to mass control because humanity has acquiesced to that control. This is all cause and effect and literally a case of give and take. In the same way world events of every kind are connected and the Cult works incessantly to sell the illusion of the random and coincidental to maintain the essential (to them) perception of dots that hide the picture. Renegade Minds know this and constantly scan the world for patterns of connection. This is absolutely pivotal in understanding the happenings in the world and without that perspective clarity is impossible. First you know the planned outcome and then you identify the steps on the journey – the day-by-day apparently random which, when connected in relation to the outcome, no longer appear as individual events, but as the proverbial *chain* of events leading in the same direction. I'll give you some examples:

Political puppet show

We are told to believe that politics is 'adversarial' in that different parties with different beliefs engage in an endless tussle for power. There may have been some truth in that up to a point – and only a point – but today divisions between 'different' parties are rhetorical not ideological. Even the rhetorical is fusing into one-speak as the parties eject any remaining free thinkers while others succumb to the ever-gathering intimidation of anyone with the 'wrong' opinion. The Cult is not a new phenomenon and can be traced back thousands of years as my books have documented. Its intergenerational initiates have been manipulating events with increasing effect the more that global power has been centralised. In ancient times the Cult secured control through the system of monarchy in which 'special' bloodlines (of which more later) demanded the right to rule as kings and queens simply by birthright and by vanquishing others who claimed the same birthright. There came a time, however, when people had matured enough to see the unfairness of such tyranny and demanded a say in who governed them. Note the word – *governed* them. Not served them – *governed* them, hence government defined as 'the political direction and control exercised over the

actions of the members, citizens, or inhabitants of communities, societies, and states; direction of the affairs of a state, community, etc.' Governments exercise control over rather than serve just like the monarchies before them. Bizarrely there are still countries like the United Kingdom which are ruled by a monarch *and* a government that officially answers to the monarch. The UK head of state and that of Commonwealth countries such as Canada, Australia and New Zealand is 'selected' by who in a *single family* had unprotected sex with whom and in what order. Pinch me it can't be true. Ouch! Shit, it is. The demise of monarchies in most countries offered a potential vacuum in which some form of free and fair society could arise and the Cult had that base covered. Monarchies had served its interests but they couldn't continue in the face of such widespread opposition and, anyway, replacing a 'royal' dictatorship that people could see with a dictatorship 'of the people' hiding behind the concept of 'democracy' presented far greater manipulative possibilities and ways of hiding coordinated tyranny behind the illusion of 'freedom'.

Democracy is quite wrongly defined as government selected by the population. This is not the case at all. It is government selected by *some* of the population (and then only in theory). This 'some' doesn't even have to be the majority as we have seen so often in first-past-the-post elections in which the so-called majority party wins fewer votes than the 'losing' parties combined. Democracy can give total power to a party in government from a minority of the votes cast. It's a sleight of hand to sell tyranny as freedom. Seventy-four million Trump-supporting Americans didn't vote for the 'Democratic' Party of Joe Biden in the distinctly dodgy election in 2020 and yet far from acknowledging the wishes and feelings of that great percentage of American society the Cult-owned Biden government set out from day one to destroy them and their right to a voice and opinion. Empty shell Biden and his Cult handlers said they were doing this to 'protect democracy'. Such is the level of lunacy and sickness to which politics has descended. Connect the dots and relate them to the desired outcome – a world government run by self-appointed technocrats and no longer even elected

politicians. While operating through its political agents in government the Cult is at the same time encouraging public distain for politicians by putting idiots and incompetents in theoretical power on the road to deleting them. The idea is to instil a public reaction that says of the technocrats: 'Well, they couldn't do any worse than the pathetic politicians.' It's all about controlling perception and Renegade Minds can see through that while programmed minds cannot when they are ignorant of both the planned outcome and the manipulation techniques employed to secure that end. This knowledge can be learned, however, and fast if people choose to get informed.

Politics may at first sight appear very difficult to control from a central point. I mean look at the 'different' parties and how would you be able to oversee them all and their constituent parts? In truth, it's very straightforward because of their structure. We are back to the pyramid of imposition and acquiescence. Organisations are structured in the same way as the system as a whole. Political parties are not open forums of free expression. They are hierarchies. I was a national spokesman for the British Green Party which claimed to be a different kind of politics in which influence and power was devolved; but I can tell you from direct experience – and it's far worse now – that Green parties are run as hierarchies like all the others however much they may try to hide that fact or kid themselves that it's not true. A very few at the top of all political parties are directing policy and personnel. They decide if you are elevated in the party or serve as a government minister and to do that you have to be a yes man or woman. Look at all the maverick political thinkers who never ascended the greasy pole. If you want to progress within the party or reach 'high-office' you need to fall into line and conform. Exceptions to this are rare indeed. Should you want to run for parliament or Congress you have to persuade the local or state level of the party to select you and for that you need to play the game as dictated by the hierarchy. If you secure election and wish to progress within the greater structure you need to go on conforming to what is acceptable to those running the hierarchy

from the peak of the pyramid. Political parties are perceptual gulags and the very fact that there are party 'Whips' appointed to 'whip' politicians into voting the way the hierarchy demands exposes the ridiculous idea that politicians are elected to serve the people they are supposed to represent. Cult operatives and manipulation has long seized control of major parties that have any chance of forming a government and at least most of those that haven't. A new party forms and the Cult goes to work to infiltrate and direct. This has reached such a level today that you see video compilations of 'leaders' of all parties whether Democrats, Republicans, Conservative, Labour and Green parroting the same Cult mantra of 'Build Back Better' and the 'Great Reset' which are straight off the Cult song-sheet to describe the transformation of global society in response to the Cult-instigated hoaxes of the 'Covid pandemic' and human-caused 'climate change'. To see Caroline Lucas, the Green Party MP that I knew when I was in the party in the 1980s, speaking in support of plans proposed by Cult operative Klaus Schwab representing the billionaire global elite is a real head-shaker.

Many parties – one master

The party system is another mind-trick and was instigated to change the nature of the dictatorship by swapping 'royalty' for dark suits that people believed – though now ever less so – represented their interests. Understanding this trick is to realise that a single force (the Cult) controls all parties either directly in terms of the major ones or through manipulation of perception and ideology with others. You don't need to manipulate Green parties to demand your transformation of society in the name of 'climate change' when they are obsessed with the lie that this is essential to 'save the planet'. You just give them a platform and away they go serving your interests while believing they are being environmentally virtuous. America's political structure is a perfect blueprint for how the two or multi-party system is really a one-party state. The Republican Party is controlled from one step back in the shadows by a group made up of billionaires and their gofers known as neoconservatives or Neocons.

I have exposed them in fine detail in my books and they were the driving force behind the policies of the imbecilic presidency of Boy George Bush which included 9/11 (see *The Trigger* for a comprehensive demolition of the official story), the subsequent 'war on terror' (war *of* terror) and the invasions of Afghanistan and Iraq. The latter was a No-Problem-Reaction-Solution based on claims by Cult operatives, including Bush and British Prime Minister Tony Blair, about Saddam Hussein's 'weapons of mass destruction' which did not exist as war criminals Bush and Blair well knew.

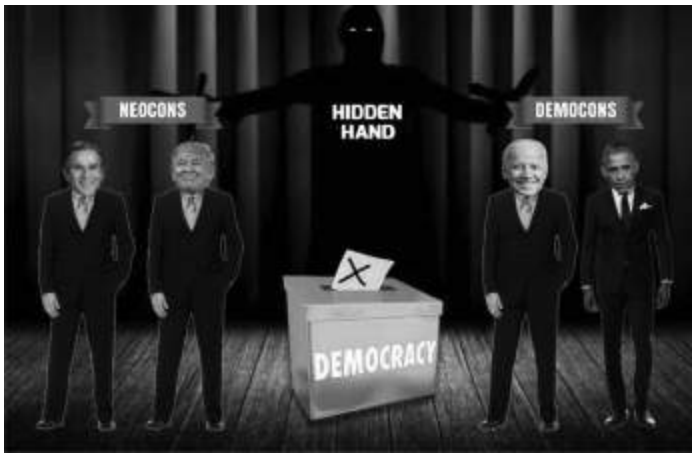

Figure 6: Different front people, different parties – same control system.

The Democratic Party has its own 'Neocon' group controlling from the background which I call the 'Democons' and here's the penny-drop – the Neocons and Democons answer to the same masters one step further back into the shadows (Fig 6). At that level of the Cult the Republican and Democrat parties are controlled by the same people and no matter which is in power the Cult is in power. This is how it works in almost every country and certainly in Britain with Conservative, Labour, Liberal Democrat and Green parties now all on the same page whatever the rhetoric may be in their feeble attempts to appear different. Neocons operated at the time of Bush through a think tank called The Project for the New American Century which in September, 2000, published a document entitled *Rebuilding America's Defenses: Strategies, Forces, and Resources*

For a New Century demanding that America fight 'multiple, simultaneous major theatre wars' as a 'core mission' to force regime-change in countries including Iraq, Libya and Syria. Neocons arranged for Bush ('Republican') and Blair ('Labour Party') to front-up the invasion of Iraq and when they departed the Democons orchestrated the targeting of Libya and Syria through Barack Obama ('Democrat') and British Prime Minister David Cameron ('Conservative Party'). We have 'different' parties and 'different' people, but the same unfolding script. The more the Cult has seized the reigns of parties and personnel the more their policies have transparently pursued the same agenda to the point where the fascist 'Covid' impositions of the Conservative junta of Jackboot Johnson in Britain were opposed by the Labour Party because they were not fascist enough. The Labour Party is likened to the US Democrats while the Conservative Party is akin to a British version of the Republicans and on both sides of the Atlantic they all speak the same language and support the direction demanded by the Cult although some more enthusiastically than others. It's a similar story in country after country because it's all centrally controlled. Oh, but what about Trump? I'll come to him shortly. Political 'choice' in the 'party' system goes like this: You vote for Party A and they get into government. You don't like what they do so next time you vote for Party B and they get into government. You don't like what they do when it's pretty much the same as Party A and why wouldn't that be with both controlled by the same force? Given that only two, sometimes three, parties have any chance of forming a government to get rid of Party B that you don't like you have to vote again for Party A which … you don't like. This, ladies and gentlemen, is what they call 'democracy' which we are told – wrongly – is a term interchangeable with 'freedom'.

The cult of cults

At this point I need to introduce a major expression of the Global Cult known as Sabbatian-Frankism. Sabbatian is also spelt as Sabbatean. I will summarise here. I have published major exposés

and detailed background in other works. Sabbatian-Frankism combines the names of two frauds posing as 'Jewish' men, Sabbatai Zevi (1626-1676), a rabbi, black magician and occultist who proclaimed he was the Jewish messiah; and Jacob Frank (1726-1791), the Polish 'Jew', black magician and occultist who said he was the reincarnation of 'messiah' Zevi and biblical patriarch Jacob. They worked across two centuries to establish the Sabbatian-Frankist cult that plays a major, indeed central, role in the manipulation of human society by the Global Cult which has its origins much further back in history than Sabbatai Zevi. I should emphasise two points here in response to the shrill voices that will scream 'anti-Semitism': (1) Sabbatian-Frankists are NOT Jewish and only pose as such to hide their cult behind a Jewish façade; and (2) my information about this cult has come from Jewish sources who have long realised that their society and community has been infiltrated and taken over by interloper Sabbatian-Frankists. Infiltration has been the foundation technique of Sabbatian-Frankism from its official origin in the 17th century. Zevi's Sabbatian sect attracted a massive following described as the biggest messianic movement in Jewish history, spreading as far as Africa and Asia, and he promised a return for the Jews to the 'Promised Land' of Israel. Sabbatianism was not Judaism but an inversion of everything that mainstream Judaism stood for. So much so that this sinister cult would have a feast day when Judaism had a fast day and whatever was forbidden in Judaism the Sabbatians were encouraged and even commanded to do. This included incest and what would be today called Satanism. Members were forbidden to marry outside the sect and there was a system of keeping their children ignorant of what they were part of until they were old enough to be trusted not to unknowingly reveal anything to outsiders. The same system is employed to this day by the Global Cult in general which Sabbatian-Frankism has enormously influenced and now largely controls.

Zevi and his Sabbatians suffered a setback with the intervention by the Sultan of the Islamic Ottoman Empire in the Middle East and what is now the Republic of Turkey where Zevi was located. The

Sultan gave him the choice of proving his 'divinity', converting to Islam or facing torture and death. Funnily enough Zevi chose to convert or at least appear to. Some of his supporters were disillusioned and drifted away, but many did not with 300 families also converting – only in theory – to Islam. They continued behind this Islamic smokescreen to follow the goals, rules and rituals of Sabbatianism and became known as 'crypto-Jews' or the 'Dönmeh' which means 'to turn'. This is rather ironic because they didn't 'turn' and instead hid behind a fake Islamic persona. The process of appearing to be one thing while being very much another would become the calling card of Sabbatianism especially after Zevi's death and the arrival of the Satanist Jacob Frank in the 18th century when the cult became Sabbatian-Frankism and plumbed still new depths of depravity and infiltration which included – still includes – human sacrifice and sex with children. Wherever Sabbatians go paedophilia and Satanism follow and is it really a surprise that Hollywood is so infested with child abuse and Satanism when it was established by Sabbatian-Frankists and is still controlled by them? Hollywood has been one of the prime vehicles for global perceptual programming and manipulation. How many believe the version of 'history' portrayed in movies when it is a travesty and inversion (again) of the truth? Rabbi Marvin Antelman describes Frankism in his book, *To Eliminate the Opiate*, as 'a movement of complete evil' while Jewish professor Gershom Scholem said of Frank in *The Messianic Idea in Judaism*: 'In all his actions [he was] a truly corrupt and degenerate individual ... one of the most frightening phenomena in the whole of Jewish history.' Frank was excommunicated by traditional rabbis, as was Zevi, but Frank was undeterred and enjoyed vital support from the House of Rothschild, the infamous banking dynasty whose inner-core are Sabbatian-Frankists and not Jews. Infiltration of the Roman Church and Vatican was instigated by Frank with many Dönmeh 'turning' again to convert to Roman Catholicism with a view to hijacking the reins of power. This was the ever-repeating modus operandi and continues to be so. Pose as an advocate of the religion, culture or country that you want to control and then

manipulate your people into the positions of authority and influence largely as advisers, administrators and Svengalis for those that appear to be in power. They did this with Judaism, Christianity (Christian Zionism is part of this), Islam and other religions and nations until Sabbatian-Frankism spanned the world as it does today.

Sabbatian Saudis and the terror network

One expression of the Sabbatian-Frankist Dönmeh within Islam is the ruling family of Saudi Arabia, the House of Saud, through which came the vile distortion of Islam known as Wahhabism. This is the violent creed followed by terrorist groups like Al-Qaeda and ISIS or Islamic State. Wahhabism is the hand-chopping, head-chopping 'religion' of Saudi Arabia which is used to keep the people in a constant state of fear so the interloper House of Saud can continue to rule. Al-Qaeda and Islamic State were lavishly funded by the House of Saud while being created and directed by the Sabbatian-Frankist network in the United States that operates through the Pentagon, CIA and the government in general of whichever 'party'. The front man for the establishment of Wahhabism in the middle of the 18th century was a Sabbatian-Frankist 'crypto-Jew' posing as Islamic called Muhammad ibn Abd al-Wahhab. His daughter would marry the son of Muhammad bin Saud who established the first Saudi state before his death in 1765 with support from the British Empire. Bin Saud's successors would establish modern Saudi Arabia in league with the British and Americans in 1932 which allowed them to seize control of Islam's major shrines in Mecca and Medina. They have dictated the direction of Sunni Islam ever since while Iran is the major centre of the Shiite version and here we have the source of at least the public conflict between them. The Sabbatian network has used its Wahhabi extremists to carry out Problem-Reaction-Solution terrorist attacks in the name of 'Al-Qaeda' and 'Islamic State' to justify a devastating 'war on terror', ever-increasing surveillance of the population and to terrify people into compliance. Another insight of the Renegade Mind is the streetwise understanding that

just because a country, location or people are attacked doesn't mean that those apparently representing that country, location or people are not behind the attackers. Often they are *orchestrating* the attacks because of the societal changes that can be then justified in the name of 'saving the population from terrorists'.

I show in great detail in *The Trigger* how Sabbatian-Frankists were the real perpetrators of 9/11 and not '19 Arab hijackers' who were blamed for what happened. Observe what was justified in the name of 9/11 alone in terms of Middle East invasions, mass surveillance and control that fulfilled the demands of the Project for the New American Century document published by the Sabbatian Neocons. What appear to be enemies are on the deep inside players on the same Sabbatian team. Israel and Arab 'royal' dictatorships are all ruled by Sabbatians and the recent peace agreements between Israel and Saudi Arabia, the United Arab Emirates (UAE) and others are only making formal what has always been the case behind the scenes. Palestinians who have been subjected to grotesque tyranny since Israel was bombed and terrorised into existence in 1948 have never stood a chance. Sabbatian-Frankists have controlled Israel (so the constant theme of violence and war which Sabbatians love) and they have controlled the Arab countries that Palestinians have looked to for real support that never comes. 'Royal families' of the Arab world in Saudi Arabia, Bahrain, UAE, etc., are all Sabbatians with allegiance to the aims of the cult and not what is best for their Arabic populations. They have stolen the oil and financial resources from their people by false claims to be 'royal dynasties' with a genetic right to rule and by employing vicious militaries to impose their will.

Satanic 'illumination'

The Satanist Jacob Frank formed an alliance in 1773 with two other Sabbatians, Mayer Amschel Rothschild (1744-1812), founder of the Rothschild banking dynasty, and Jesuit-educated fraudulent Jew, Adam Weishaupt, and this led to the formation of the Bavarian Illuminati, firstly under another name, in 1776. The Illuminati would

be the manipulating force behind the French Revolution (1789-1799) and was also involved in the American Revolution (1775-1783) before and after the Illuminati's official creation. Weishaupt would later become (in public) a Protestant Christian in archetypal Sabbatian style. I read that his name can be decoded as Adam-Weishaupt or 'the first man to lead those who know'. He wasn't a leader in the sense that he was a subordinate, but he did lead those below him in a crusade of transforming human society that still continues today. The theme was confirmed as early as 1785 when a horseman courier called Lanz was reported to be struck by lighting and extensive Illuminati documents were found in his saddlebags. They made the link to Weishaupt and detailed the plan for world takeover. Current events with 'Covid' fascism have been in the making for a very long time. Jacob Frank was jailed for 13 years by the Catholic Inquisition after his arrest in 1760 and on his release he headed for Frankfurt, Germany, home city and headquarters of the House of Rothschild where the alliance was struck with Mayer Amschel Rothschild and Weishaupt. Rothschild arranged for Frank to be given the title of Baron and he became a wealthy nobleman with a big following of Jews in Germany, the Austro-Hungarian Empire and other European countries. Most of them would have believed he was on their side.

The name 'Illuminati' came from the Zohar which is a body of works in the Jewish mystical 'bible' called the Kabbalah. 'Zohar' is the foundation of Sabbatian-Frankist belief and in Hebrew 'Zohar' means 'splendour', 'radiance', 'illuminated', and so we have 'Illuminati'. They claim to be the 'Illuminated Ones' from their knowledge systematically hidden from the human population and passed on through generations of carefully-chosen initiates in the global secret society network or Cult. Hidden knowledge includes an awareness of the Cult agenda for the world and the nature of our collective reality that I will explore later. Cult 'illumination' is symbolised by the torch held by the Statue of Liberty which was gifted to New York by French Freemasons in Paris who knew exactly what it represents. 'Liberty' symbolises the goddess worshipped in

Babylon as Queen Semiramis or Ishtar. The significance of this will become clear. Notice again the ubiquitous theme of inversion with the Statue of 'Liberty' really symbolising mass control (Fig 7). A mirror-image statute stands on an island in the River Seine in Paris from where New York Liberty originated (Fig 8). A large replica of the Liberty flame stands on top of the Pont de l'Alma tunnel in Paris where Princess Diana died in a Cult ritual described in *The Biggest Secret*. Lucifer 'the light bringer' is related to all this (and much more as we'll see) and 'Lucifer' is a central figure in Sabbatian-Frankism and its associated Satanism. Sabbatians reject the Jewish Torah, or Pentateuch, the 'five books of Moses' in the Old Testament known as Genesis, Exodus, Leviticus, Numbers, and Deuteronomy which are claimed by Judaism and Christianity to have been dictated by 'God' to Moses on Mount Sinai. Sabbatians say these do not apply to them and they seek to replace them with the Zohar to absorb Judaism and its followers into their inversion which is an expression of a much greater global inversion. They want to delete all religions and force humanity to worship a one-world religion – Sabbatian Satanism that also includes worship of the Earth goddess. Satanic themes are being more and more introduced into mainstream society and while Christianity is currently the foremost target for destruction the others are planned to follow.

Figure 7: The Cult goddess of Babylon disguised as the Statue of Liberty holding the flame of Lucifer the 'light bringer'.

Figure 8: Liberty's mirror image in Paris where the New York version originated.

Marx brothers

Rabbi Marvin Antelman connects the Illuminati to the Jacobins in *To Eliminate the Opiate* and Jacobins were the force behind the French Revolution. He links both to the Bund der Gerechten, or League of the Just, which was the network that inflicted communism/Marxism on the world. Antelman wrote:

> The original inner circle of the Bund der Gerechten consisted of born Catholics, Protestants and Jews [Sabbatian-Frankist infiltrators], and those representatives of respective subdivisions formulated schemes for the ultimate destruction of their faiths. The heretical Catholics laid plans which they felt would take a century or more for the ultimate destruction of the church; the apostate Jews for the ultimate destruction of the Jewish religion.

Sabbatian-created communism connects into this anti-religion agenda in that communism does not allow for the free practice of religion. The Sabbatian 'Bund' became the International Communist Party and Communist League and in 1848 'Marxism' was born with the Communist Manifesto of Sabbatian assets Karl Marx and Friedrich Engels. It is absolutely no coincidence that Marxism, just a different name for fascist and other centrally-controlled tyrannies, is being imposed worldwide as a result of the 'Covid' hoax and nor that Marxist/fascist China was the place where the hoax originated. The reason for this will become very clear in the chapter 'Covid: The calculated catastrophe'. The so-called 'Woke' mentality has hijacked

traditional beliefs of the political left and replaced them with far-right make-believe 'social justice' better known as Marxism. Woke will, however, be swallowed by its own perceived 'revolution' which is really the work of billionaires and billionaire corporations feigning being 'Woke'. Marxism is being touted by Wokers as a replacement for 'capitalism' when we don't have 'capitalism'. We have cartelism in which the market is stitched up by the very Cult billionaires and corporations bankrolling Woke. Billionaires love Marxism which keeps the people in servitude while they control from the top. Terminally naïve Wokers think they are 'changing the world' when it's the Cult that is doing the changing and when they have played their vital part and become surplus to requirements they, too, will be targeted. The Illuminati-Jacobins were behind the period known as 'The Terror' in the French Revolution in 1793 and 1794 when Jacobin Maximillian de Robespierre and his Orwellian 'Committee of Public Safety' killed 17,000 'enemies of the Revolution' who had once been 'friends of the Revolution'. Karl Marx (1818-1883), whose Sabbatian creed of Marxism has cost the lives of at least 100 million people, is a hero once again to Wokers who have been systematically kept ignorant of real history by their 'education' programming. As a result they now promote a Sabbatian 'Marxist' abomination destined at some point to consume them. Rabbi Antelman, who spent decades researching the Sabbatian plot, said of the League of the Just and Karl Marx:

> Contrary to popular opinion Karl Marx did not originate the Communist Manifesto. He was paid for his services by the League of the Just, which was known in its country of origin, Germany, as the Bund der Geaechteten.

Antelman said the text attributed to Marx was the work of other people and Marx 'was only repeating what others already said'. Marx was 'a hired hack – lackey of the wealthy Illuminists'. Marx famously said that religion was the 'opium of the people' (part of the Sabbatian plan to demonise religion) and Antelman called his books, *To Eliminate the Opiate*. Marx was born Jewish, but his family converted to Christianity (Sabbatian modus operandi) and he

attacked Jews, not least in his book, *A World Without Jews*. In doing so he supported the Sabbatian plan to destroy traditional Jewishness and Judaism which we are clearly seeing today with the vindictive targeting of orthodox Jews by the Sabbatian government of Israel over 'Covid' laws. I don't follow any religion and it has done much damage to the world over centuries and acted as a perceptual straightjacket. Renegade Minds, however, are always asking *why* something is being done. It doesn't matter if they agree or disagree with what is happening – *why* is it happening is the question. The 'why?' can be answered with regard to religion in that religions create interacting communities of believers when the Cult wants to dismantle all discourse, unity and interaction (see 'Covid' lockdowns) and the ultimate goal is to delete all religions for a one-world religion of Cult Satanism worshipping their 'god' of which more later. We see the same 'why?' with gun control in America. I don't have guns and don't want them, but why is the Cult seeking to disarm the population at the same time that law enforcement agencies are armed to their molars and why has every tyrant in history sought to disarm people before launching the final takeover? They include Hitler, Stalin, Pol Pot and Mao who followed confiscation with violent seizing of power. You know it's a Cult agenda by the people who immediately race to the microphones to exploit dead people in multiple shootings. Ultra-Zionist Cult lackey Senator Chuck Schumer was straight on the case after ten people were killed in Boulder, Colorado in March, 2121. Simple rule … if Schumer wants it the Cult wants it and the same with his ultra-Zionist mate the wild-eyed Senator Adam Schiff. At the same time they were calling for the disarmament of Americans, many of whom live a long way from a police response, Schumer, Schiff and the rest of these pampered clowns were sitting on Capitol Hill behind a razor-wired security fence protected by thousands of armed troops in addition to their own armed bodyguards. Mom and pop in an isolated home? They're just potential mass shooters.

Zion Mainframe

Sabbatian-Frankists and most importantly the Rothschilds were behind the creation of 'Zionism', a political movement that demanded a Jewish homeland in Israel as promised by Sabbatai Zevi. The very symbol of Israel comes from the German meaning of the name Rothschild. Dynasty founder Mayer Amschel Rothschild changed the family name from Bauer to Rothschild, or 'Red-Shield' in German, in deference to the six-pointed 'Star of David' hexagram displayed on the family's home in Frankfurt. The symbol later appeared on the flag of Israel after the Rothschilds were centrally involved in its creation. Hexagrams are not a uniquely Jewish symbol and are widely used in occult ('hidden') networks often as a symbol for Saturn (see my other books for why). Neither are Zionism and Jewishness interchangeable. Zionism is a political movement and philosophy and not a 'race' or a people. Many Jews oppose Zionism and many non-Jews, including US President Joe Biden, call themselves Zionists as does Israel-centric Donald Trump. America's support for the Israel government is pretty much a gimme with ultra-Zionist billionaires and corporations providing fantastic and dominant funding for both political parties. Former Congresswoman Cynthia McKinney has told how she was approached immediately she ran for office to 'sign the pledge' to Israel and confirm that she would always vote in that country's best interests. All American politicians are approached in this way. Anyone who refuses will get no support or funding from the enormous and all-powerful Zionist lobby that includes organisations like mega-lobby group AIPAC, the American Israel Public Affairs Committee. Trump's biggest funder was ultra-Zionist casino and media billionaire Sheldon Adelson while major funders of the Democratic Party include ultra-Zionist George Soros and ultra-Zionist financial and media mogul, Haim Saban. Some may reel back at the suggestion that Soros is an Israel-firster (Sabbatian-controlled Israel-firster), but Renegade Minds watch the actions not the words and everywhere Soros donates his billions the Sabbatian agenda benefits. In the spirit of Sabbatian inversion Soros pledged $1 billion for a new university network to promote 'liberal values and tackle intolerance'. He made the announcement during his annual speech

at the Cult-owned World Economic Forum in Davos, Switzerland, in January, 2020, after his 'harsh criticism' of 'authoritarian rulers' around the world. You can only laugh at such brazen mendacity. How *he* doesn't laugh is the mystery. Translated from the Orwellian 'liberal values and tackle intolerance' means teaching non-white people to hate white people and for white people to loathe themselves for being born white. The reason for that will become clear.

The 'Anti-Semitism' fraud

Zionists support the Jewish homeland in the land of Palestine which has been the Sabbatian-Rothschild goal for so long, but not for the benefit of Jews. Sabbatians and their global Anti-Semitism Industry have skewed public and political opinion to equate opposing the violent extremes of Zionism to be a blanket attack and condemnation of all Jewish people. Sabbatians and their global Anti-Semitism Industry have skewed public and political opinion to equate opposing the violent extremes of Zionism to be a blanket attack and condemnation of all Jewish people. This is nothing more than a Sabbatian protection racket to stop legitimate investigation and exposure of their agendas and activities. The official definition of 'anti-Semitism' has more recently been expanded to include criticism of Zionism – a *political movement* – and this was done to further stop exposure of Sabbatian infiltrators who created Zionism as we know it today in the 19th century. Renegade Minds will talk about these subjects when they know the shit that will come their way. People must decide if they want to know the truth or just cower in the corner in fear of what others will say. Sabbatians have been trying to label me as 'anti-Semitic' since the 1990s as I have uncovered more and more about their background and agendas. Useless, gutless, fraudulent 'journalists' then just repeat the smears without question and on the day I was writing this section a pair of unquestioning repeaters called Ben Quinn and Archie Bland (how appropriate) outright called me an 'anti-Semite' in the establishment propaganda sheet, the London *Guardian*, with no supporting evidence. The

Sabbatian Anti-Semitism Industry said so and who are they to question that? They wouldn't dare. Ironically 'Semitic' refers to a group of languages in the Middle East that are almost entirely Arabic. 'Anti-Semitism' becomes 'anti-Arab' which if the consequences of this misunderstanding were not so grave would be hilarious. Don't bother telling Quinn and Bland. I don't want to confuse them, bless 'em. One reason I am dubbed 'anti-Semitic' is that I wrote in the 1990s that Jewish operatives (Sabbatians) were heavily involved in the Russian Revolution when Sabbatians overthrew the Romanov dynasty. This apparently made me 'anti-Semitic'. Oh, really? Here is a section from *The Trigger*:

British journalist Robert Wilton confirmed these themes in his 1920 book *The Last Days of the Romanovs* when he studied official documents from the Russian government to identify the members of the Bolshevik ruling elite between 1917 and 1919. The Central Committee included 41 Jews among 62 members; the Council of the People's Commissars had 17 Jews out of 22 members; and 458 of the 556 most important Bolshevik positions between 1918 and 1919 were occupied by Jewish people. Only 17 were Russian. Then there were the 23 Jews among the 36 members of the vicious Cheka Soviet secret police established in 1917 who would soon appear all across the country.

Professor Robert Service of Oxford University, an expert on 20th century Russian history, found evidence that ['Jewish'] Leon Trotsky had sought to make sure that Jews were enrolled in the Red Army and were disproportionately represented in the Soviet civil bureaucracy that included the Cheka which performed mass arrests, imprisonment and executions of 'enemies of the people'. A US State Department Decimal File (861.00/5339) dated November 13th, 1918, names [Rothschild banking agent in America] Jacob Schiff and a list of ultra-Zionists as funders of the Russian Revolution leading to claims of a 'Jewish plot', but the key point missed by all is they were not 'Jews' – they were Sabbatian-Frankists.

Britain's Winston Churchill made the same error by mistake or otherwise. He wrote in a 1920 edition of the *Illustrated Sunday Herald* that those behind the Russian revolution were part of a 'worldwide conspiracy for the overthrow of civilisation and for the reconstitution of society on the basis of arrested development, of envious malevolence, and impossible equality' (see 'Woke' today because that has been created by the same network). Churchill said there was no need to exaggerate the part played in the creation of Bolshevism and in the actual bringing about of the Russian

Revolution 'by these international and for the most part atheistical Jews' ['atheistical Jews' = Sabbatians]. Churchill said it is certainly a very great one and probably outweighs all others: 'With the notable exception of Lenin, the majority of the leading figures are Jews.' He went on to describe, knowingly or not, the Sabbatian modus operandi of placing puppet leaders nominally in power while they control from the background:

> Moreover, the principal inspiration and driving power comes from the Jewish leaders. Thus Tchitcherin, a pure Russian, is eclipsed by his nominal subordinate, Litvinoff, and the influence of Russians like Bukharin or Lunacharski cannot be compared with the power of Trotsky, or of Zinovieff, the Dictator of the Red Citadel (Petrograd), or of Krassin or Radek – all Jews. In the Soviet institutions the predominance of Jews is even more astonishing. And the prominent, if not indeed the principal, part in the system of terrorism applied by the Extraordinary Commissions for Combatting Counter-Revolution has been taken by Jews, and in some notable cases by Jewesses.

What I said about seriously disproportionate involvement in the Russian Revolution by Jewish 'revolutionaries' (Sabbatians) is provable fact, but truth is no defence against the Sabbatian Anti-Semitism Industry, its repeater parrots like Quinn and Bland, and the now breathtaking network of so-called 'Woke' 'anti-hate' groups with interlocking leaderships and funding which have the role of discrediting and silencing anyone who gets too close to exposing the Sabbatians. We have seen 'truth is no defence' confirmed in legal judgements with the Saskatchewan Human Rights Commission in Canada decreeing this: 'Truthful statements can be presented in a manner that would meet the definition of hate speech, and not all truthful statements must be free from restriction.' Most 'anti-hate' activists, who are themselves consumed by hatred, are too stupid and ignorant of the world to know how they are being used. They are far too far up their own virtue-signalling arses and it's far too dark for them to see anything.

The 'revolution' game

The background and methods of the 'Russian' Revolution are straight from the Sabbatian playbook seen in the French Revolution

and endless others around the world that appear to start as a revolution of the people against tyrannical rule and end up with a regime change to more tyrannical rule overtly or covertly. Wars, terror attacks and regime overthrows follow the Sabbatian cult through history with its agents creating them as Problem-Reaction-Solutions to remove opposition on the road to world domination. Sabbatian dots connect the Rothschilds with the Illuminati, Jacobins of the French Revolution, the 'Bund' or League of the Just, the International Communist Party, Communist League and the Communist Manifesto of Karl Marx and Friedrich Engels that would lead to the Rothschild-funded Russian Revolution. The sequence comes under the heading of 'creative destruction' when you advance to your global goal by continually destroying the status quo to install a new status quo which you then also destroy. The two world wars come to mind. With each new status quo you move closer to your planned outcome. Wars and mass murder are to Sabbatians a collective blood sacrifice ritual. They are obsessed with death for many reasons and one is that death is an inversion of life. Satanists and Sabbatians are obsessed with death and often target churches and churchyards for their rituals. Inversion-obsessed Sabbatians explain the use of inverted symbolism including the *inverted* pentagram and *inverted* cross. The inversion of the cross has been related to targeting Christianity, but the cross was a religious symbol long before Christianity and its inversion is a statement about the Sabbatian mentality and goals more than any single religion.

Sabbatians operating in Germany were behind the rise of the occult-obsessed Nazis and the subsequent Jewish exodus from Germany and Europe to Palestine and the United States after World War Two. The Rothschild dynasty was at the forefront of this both as political manipulators and by funding the operation. Why would Sabbatians help to orchestrate the horrors inflicted on Jews by the Nazis and by Stalin after they organised the Russian Revolution? Sabbatians hate Jews and their religion, that's why. They pose as Jews and secure positions of control within Jewish society and play the 'anti-Semitism' card to protect themselves from exposure

through a global network of organisations answering to the Sabbatian-created-and-controlled globe-spanning intelligence network that involves a stunning web of military-intelligence operatives and operations for a tiny country of just nine million. Among them are Jewish assets who are not Sabbatians but have been convinced by them that what they are doing is for the good of Israel and the Jewish community to protect them from what they have been programmed since childhood to believe is a Jew-hating hostile world. The Jewish community is just a highly convenient cover to hide the true nature of Sabbatians. Anyone getting close to exposing their game is accused by Sabbatian place-people and gofers of 'anti-Semitism' and claiming that all Jews are part of a plot to take over the world. I am not saying that. I am saying that Sabbatians – the *real* Jew-haters – have infiltrated the Jewish community to use them both as a cover and an 'anti-Semitic' defence against exposure. Thus we have the Anti-Semitism Industry targeted researchers in this way and most Jewish people think this is justified and genuine. They don't know that their 'Jewish' leaders and institutions of state, intelligence and military are not controlled by Jews at all, but cultists and stooges of Sabbatian-Frankism. I once added my name to a pro-Jewish freedom petition online and the next time I looked my name was gone and text had been added to the petition blurb to attack me as an 'anti-Semite' such is the scale of perceptual programming.

Moving on America

I tell the story in *The Trigger* and a chapter called 'Atlantic Crossing' how particularly after Israel was established the Sabbatians moved in on the United States and eventually grasped control of government administration, the political system via both Democrats and Republicans, the intelligence community like the CIA and National Security Agency (NSA), the Pentagon and mass media. Through this seriously compartmentalised network Sabbatians and their operatives in Mossad, Israeli Defense Forces (IDF) and US agencies pulled off 9/11 and blamed it on 19 'Al-Qaeda hijackers' dominated by men from, or connected to, Sabbatian-ruled Saudi

Arabia. The '19' were not even on the planes let alone flew those big passenger jets into buildings while being largely incompetent at piloting one-engine light aircraft. 'Hijacker' Hani Hanjour who is said to have flown American Airlines Flight 77 into the Pentagon with a turn and manoeuvre most professional pilots said they would have struggled to do was banned from renting a small plane by instructors at the Freeway Airport in Bowie, Maryland, just *six weeks* earlier on the grounds that he was an incompetent pilot. The Jewish population of the world is just 0.2 percent with even that almost entirely concentrated in Israel (75 percent Jewish) and the United States (around two percent). This two percent and globally 0.2 percent refers to *Jewish* people and not Sabbatian interlopers who are a fraction of that fraction. What a sobering thought when you think of the fantastic influence on world affairs of tiny Israel and that the Project for the New America Century (PNAC) which laid out the blueprint in September, 2000, for America's war on terror and regime change wars in Iraq, Libya and Syria was founded and dominated by Sabbatians known as 'Neocons'. The document conceded that this plan would not be supported politically or publicly without a major attack on American soil and a Problem-Reaction-Solution excuse to send troops to war across the Middle East. Sabbatian Neocons said:

> ... [The] process of transformation ... [war and regime change] ... is likely to be a long one, absent some catastrophic and catalysing event – like a new Pearl Harbor.

Four months later many of those who produced that document came to power with their inane puppet George Bush from the long-time Sabbatian Bush family. They included Sabbatian Dick Cheney who was officially vice-president, but really de-facto president for the entirety of the 'Bush' government. Nine months after the 'Bush' inauguration came what Bush called at the time 'the Pearl Harbor of the 21st century' and with typical Sabbatian timing and symbolism 2001 was the 60th anniversary of the attack in 1941 by the Japanese Air Force on Pearl Harbor, Hawaii, which allowed President Franklin Delano Roosevelt to take the United States into a Sabbatian-

instigated Second World War that he said in his election campaign that he never would. The evidence is overwhelming that Roosevelt and his military and intelligence networks knew the attack was coming and did nothing to stop it, but they did make sure that America's most essential naval ships were not in Hawaii at the time. Three thousand Americans died in the Pearl Harbor attacks as they did on September 11th. By the 9/11 year of 2001 Sabbatians had widely infiltrated the US government, military and intelligence operations and used their compartmentalised assets to pull off the 'Al-Qaeda' attacks. If you read *The Trigger* it will blow your mind to see the utterly staggering concentration of 'Jewish' operatives (Sabbatian infiltrators) in essential positions of political, security, legal, law enforcement, financial and business power before, during, and after the attacks to make them happen, carry them out, and then cover their tracks – and I do mean *staggering* when you think of that 0.2 percent of the world population and two percent of Americans which are Jewish while Sabbatian infiltrators are a fraction of that. A central foundation of the 9/11 conspiracy was the hijacking of government, military, Air Force and intelligence computer systems in real time through 'back-door' access made possible by Israeli (Sabbatian) 'cyber security' software. Sabbatian-controlled Israel is on the way to rivalling Silicon Valley for domination of cyberspace and is becoming the dominant force in cyber-security which gives them access to entire computer systems and their passcodes across the world. Then add to this that Zionists head (officially) Silicon Valley giants like Google (Larry Page and Sergey Brin), Google-owned YouTube (Susan Wojcicki), Facebook (Mark Zuckerberg and Sheryl Sandberg), and Apple (Chairman Arthur D. Levinson), and that ultra-Zionist hedge fund billionaire Paul Singer has a $1 billion stake in Twitter which is only nominally headed by 'CEO' pothead Jack Dorsey. As cable news host Tucker Carlson said of Dorsey: 'There used to be debate in the medical community whether dropping a ton of acid had permanent effects and I think that debate has now ended.' Carlson made the comment after Dorsey told a hearing on Capitol Hill (if you cut through his bullshit) that he

believed in free speech so long as he got to decide what you can hear and see. These 'big names' of Silicon Valley are only front men and women for the Global Cult, not least the Sabbatians, who are the true controllers of these corporations. Does anyone still wonder why these same people and companies have been ferociously censoring and banning people (like me) for exposing any aspect of the Cult agenda and especially the truth about the 'Covid' hoax which Sabbatians have orchestrated?

The Jeffrey Epstein paedophile ring was a Sabbatian operation. He was officially 'Jewish' but he was a Sabbatian and women abused by the ring have told me about the high number of 'Jewish' people involved. The Epstein horror has Sabbatian written all over it and matches perfectly their modus operandi and obsession with sex and ritual. Epstein was running a Sabbatian blackmail ring in which famous people with political and other influence were provided with young girls for sex while everything was being filmed and recorded on hidden cameras and microphones at his New York house, Caribbean island and other properties. Epstein survivors have described this surveillance system to me and some have gone public. Once the famous politician or other figure knew he or she was on video they tended to do whatever they were told. Here we go again …when you've got them by the balls their hearts and minds will follow. Sabbatians use this blackmail technique on a wide scale across the world to entrap politicians and others they need to act as demanded. Epstein's private plane, the infamous 'Lolita Express', had many well-known passengers including Bill Clinton while Bill Gates has flown on an Epstein plane and met with him four years after Epstein had been jailed for paedophilia. They subsequently met many times at Epstein's home in New York according to a witness who was there. Epstein's infamous side-kick was Ghislaine Maxwell, daughter of Mossad agent and ultra-Zionist mega-crooked British businessman, Bob Maxwell, who at one time owned the *Daily Mirror* newspaper. Maxwell was murdered at sea on his boat in 1991 by Sabbatian-controlled Mossad when he became a liability with his

business empire collapsing as a former Mossad operative has confirmed (see *The Trigger*).

Money, money, money, funny money …

Before I come to the Sabbatian connection with the last three US presidents I will lay out the crucial importance to Sabbatians of controlling banking and finance. Sabbatian Mayer Amschel Rothschild set out to dominate this arena in his family's quest for total global control. What is freedom? It is, in effect, choice. The more choices you have the freer you are and the fewer your choices the more you are enslaved. In the global structure created over centuries by Sabbatians the biggest decider and restrictor of choice is … money. Across the world if you ask people what they would like to do with their lives and why they are not doing that they will reply 'I don't have the money'. This is the idea. A global elite of multi-billionaires are described as 'greedy' and that is true on one level; but control of money – who has it and who doesn't – is not primarily about greed. It's about control. Sabbatians have seized ever more control of finance and sucked the wealth of the world out of the hands of the population. We talk now, after all, about the 'One-percent' and even then the wealthiest are a lot fewer even than that. This has been made possible by a money scam so outrageous and so vast it could rightly be called the scam of scams founded on creating 'money' out of nothing and 'loaning' that with interest to the population. Money out of nothing is called 'credit'. Sabbatians have asserted control over governments and banking ever more completely through the centuries and secured financial laws that allow banks to lend hugely more than they have on deposit in a confidence trick known as fractional reserve lending. Imagine if you could lend money that doesn't exist and charge the recipient interest for doing so. You would end up in jail. Bankers by contrast end up in mansions, private jets, Malibu and Monaco.

Banks are only required to keep a fraction of their deposits and wealth in their vaults and they are allowed to lend 'money' they don't have called 'credit. Go into a bank for a loan and if you succeed

the banker will not move any real wealth into your account. They will type into your account the amount of the agreed 'loan' – say £100,000. This is not wealth that really exists; it is non-existent, fresh-air, created-out-of-nothing 'credit' which has never, does not, and will never exist except in theory. Credit is backed by nothing except wind and only has buying power because people think that it has buying power and accept it in return for property, goods and services. I have described this situation as like those cartoon characters you see chasing each other and when they run over the edge of a cliff they keep running forward on fresh air until one of them looks down, realises what's happened, and they all crash into the ravine. The whole foundation of the Sabbatian financial system is to stop people looking down except for periodic moments when they want to crash the system (as in 2008 and 2020 ongoing) and reap the rewards from all the property, businesses and wealth their borrowers had signed over as 'collateral' in return for a 'loan' of fresh air. Most people think that money is somehow created by governments when it comes into existence from the start as a debt through banks 'lending' illusory money called credit. Yes, the very currency of exchange is a *debt* from day one issued as an interest-bearing loan. Why don't governments create money interest-free and lend it to their people interest-free? Governments are controlled by Sabbatians and the financial system is controlled by Sabbatians for whom interest-free money would be a nightmare come true. Sabbatians underpin their financial domination through their global network of central banks, including the privately-owned US Federal Reserve and Britain's Bank of England, and this is orchestrated by a privately-owned central bank coordination body called the Bank for International Settlements in Basle, Switzerland, created by the usual suspects including the Rockefellers and Rothschilds. Central bank chiefs don't answer to governments or the people. They answer to the Bank for International Settlements or, in other words, the Global Cult which is dominated today by Sabbatians.

Built-in disaster

There are so many constituent scams within the overall banking scam. When you take out a loan of thin-air credit only the amount of that loan is theoretically brought into circulation to add to the amount in circulation; but you are paying back the principle plus interest. The additional interest is not created and this means that with every 'loan' there is a shortfall in the money in circulation between what is borrowed and what has to be paid back. There is never even close to enough money in circulation to repay all outstanding public and private debt including interest. Coldly weaved in the very fabric of the system is the certainty that some will lose their homes, businesses and possessions to the banking 'lender'. This is less obvious in times of 'boom' when the amount of money in circulation (and the debt) is expanding through more people wanting and getting loans. When a downturn comes and the money supply contracts it becomes painfully obvious that there is not enough money to service all debt and interest. This is less obvious in times of 'boom' when the amount of money in circulation (and the debt) is expanding through more people wanting and getting loans. When a downturn comes and the money supply contracts and it becomes painfully obvious – as in 2008 and currently – that there is not enough money to service all debt and interest. Sabbatian banksters have been leading the human population through a calculated series of booms (more debt incurred) and busts (when the debt can't be repaid and the banks get the debtor's tangible wealth in exchange for non-existent 'credit'). With each 'bust' Sabbatian bankers have absorbed more of the world's tangible wealth and we end up with the One-percent. Governments are in bankruptcy levels of debt to the same system and are therefore owned by a system they do not control. The Federal Reserve, 'America's central bank', is privately-owned and American presidents only nominally appoint its chairman or woman to maintain the illusion that it's an arm of government. It's not. The 'Fed' is a cartel of private banks which handed billions to its associates and friends after the crash of 2008 and has been Sabbatian-controlled since it was manipulated into being in 1913 through the covert trickery of Rothschild banking agents Jacob Schiff and Paul

Warburg, and the Sabbatian Rockefeller family. Somehow from a Jewish population of two-percent and globally 0.2 percent (Sabbatian interlopers remember are far smaller) ultra-Zionists headed the Federal Reserve for 31 years between 1987 and 2018 in the form of Alan Greenspan, Bernard Bernanke and Janet Yellen (now Biden's Treasury Secretary) with Yellen's deputy chairman a Israeli-American duel citizen and ultra-Zionist Stanley Fischer, a former governor of the Bank of Israel. Ultra-Zionist Fed chiefs spanned the presidencies of Ronald Reagan ('Republican'), Father George Bush ('Republican'), Bill Clinton ('Democrat'), Boy George Bush ('Republican') and Barack Obama ('Democrat'). We should really add the pre-Greenspan chairman, Paul Adolph Volcker, 'appointed' by Jimmy Carter ('Democrat') who ran the Fed between 1979 and 1987 during the Carter and Reagan administrations before Greenspan took over. Volcker was a long-time associate and business partner of the Rothschilds. No matter what the 'party' officially in power the United States economy was directed by the same force. Here are members of the Obama, Trump and Biden administrations and see if you can make out a common theme.

Barack Obama ('Democrat')

Ultra-Zionists Robert Rubin, Larry Summers, and Timothy Geithner ran the US Treasury in the Clinton administration and two of them reappeared with Obama. Ultra-Zionist Fed chairman Alan Greenspan had manipulated the crash of 2008 through deregulation and jumped ship just before the disaster to make way for ultra-Zionist Bernard Bernanke to hand out trillions to Sabbatian 'too big to fail' banks and businesses, including the ubiquitous ultra-Zionist Goldman Sachs which has an ongoing staff revolving door operation between itself and major financial positions in government worldwide. Obama inherited the fallout of the crash when he took office in January, 2009, and fortunately he had the support of his ultra-Zionist White House Chief of Staff Rahm Emmanuel, son of a terrorist who helped to bomb Israel into being in 1948, and his ultra-Zionist senior adviser David Axelrod, chief strategist in Obama's two

successful presidential campaigns. Emmanuel, later mayor of Chicago and former senior fundraiser and strategist for Bill Clinton, is an example of the Sabbatian policy after Israel was established of migrating insider families to America so their children would be born American citizens. 'Obama' chose this financial team throughout his administration to respond to the Sabbatian-instigated crisis:

Timothy Geithner (ultra-Zionist) Treasury Secretary; Jacob J. Lew, Treasury Secretary; Larry Summers (ultra-Zionist), director of the White House National Economic Council; Paul Adolph Volcker (Rothschild business partner), chairman of the Economic Recovery Advisory Board; Peter Orszag (ultra-Zionist), director of the Office of Management and Budget overseeing all government spending; Penny Pritzker (ultra-Zionist), Commerce Secretary; Jared Bernstein (ultra-Zionist), chief economist and economic policy adviser to Vice President Joe Biden; Mary Schapiro (ultra-Zionist), chair of the Securities and Exchange Commission (SEC); Gary Gensler (ultra-Zionist), chairman of the Commodity Futures Trading Commission (CFTC); Sheila Bair (ultra-Zionist), chair of the Federal Deposit Insurance Corporation (FDIC); Karen Mills (ultra-Zionist), head of the Small Business Administration (SBA); Kenneth Feinberg (ultra-Zionist), Special Master for Executive [bail-out] Compensation. Feinberg would be appointed to oversee compensation (with strings) to 9/11 victims and families in a campaign to stop them having their day in court to question the official story. At the same time ultra-Zionist Bernard Bernanke was chairman of the Federal Reserve and these are only some of the ultra-Zionists with allegiance to Sabbatian-controlled Israel in the Obama government. Obama's biggest corporate donor was ultra-Zionist Goldman Sachs which had employed many in his administration.

Donald Trump ('Republican')

Trump claimed to be an outsider (he wasn't) who had come to 'drain the swamp'. He embarked on this goal by immediately appointing ultra-Zionist Steve Mnuchin, a Goldman Sachs employee for 17

years, as his Treasury Secretary. Others included Gary Cohn (ultra-Zionist), chief operating officer of Goldman Sachs, his first Director of the National Economic Council and chief economic adviser, who was later replaced by Larry Kudlow (ultra-Zionist). Trump's senior adviser throughout his four years in the White House was his sinister son-in-law Jared Kushner, a life-long friend of Israel Prime Minister Benjamin Netanyahu. Kushner is the son of a convicted crook who was pardoned by Trump in his last days in office. Other ultra-Zionists in the Trump administration included: Stephen Miller, Senior Policy Adviser; Avrahm Berkowitz, Deputy Adviser to Trump and his Senior Adviser Jared Kushner; Ivanka Trump, Adviser to the President, who converted to Judaism when she married Jared Kushner; David Friedman, Trump lawyer and Ambassador to Israel; Jason Greenblatt, Trump Organization executive vice president and chief legal officer, who was made Special Representative for International Negotiations and the Israeli-Palestinian Conflict; Rod Rosenstein, Deputy Attorney General; Elliot Abrams, Special Representative for Venezuela, then Iran; John Eisenberg, National Security Council Legal Adviser and Deputy Council to the President for National Security Affairs; Anne Neuberger, Deputy National Manager, National Security Agency; Ezra Cohen-Watnick, Acting Under Secretary of Defense for Intelligence; Elan Carr, Special Envoy to monitor and combat anti-Semitism; Len Khodorkovsky, Deputy Special Envoy to monitor and combat anti-Semitism; Reed Cordish, Assistant to the President, Intragovernmental and Technology Initiatives. Trump Vice President Mike Pence and Secretary of State Mike Pompeo, both Christian Zionists, were also vehement supporters of Israel and its goals and ambitions.

Donald 'free-speech believer' Trump pardoned a number of financial and violent criminals while ignoring calls to pardon Julian Assange and Edward Snowden whose crimes are revealing highly relevant information about government manipulation and corruption and the widespread illegal surveillance of the American people by US 'security' agencies. It's so good to know that Trump is on the side of freedom and justice and not mega-criminals with

allegiance to Sabbatian-controlled Israel. These included a pardon for Israeli spy Jonathan Pollard who was jailed for life in 1987 under the Espionage Act. Aviem Sella, the Mossad agent who recruited Pollard, was also pardoned by Trump while Assange sat in jail and Snowden remained in exile in Russia. Sella had 'fled' (was helped to escape) to Israel in 1987 and was never extradited despite being charged under the Espionage Act. A Trump White House statement said that Sella's clemency had been 'supported by Benjamin Netanyahu, Ron Dermer, Israel's US Ambassador, David Friedman, US Ambassador to Israel and Miriam Adelson, wife of leading Trump donor Sheldon Adelson who died shortly before. Other friends of Jared Kushner were pardoned along with Sholom Weiss who was believed to be serving the longest-ever white-collar prison sentence of more than 800 years in 2000. The sentence was commuted of Ponzi-schemer Eliyahu Weinstein who defrauded Jews and others out of $200 million. I did mention that Assange and Snowden were ignored, right? Trump gave Sabbatians almost everything they asked for in military and political support, moving the US Embassy from Tel Aviv to Jerusalem with its critical symbolic and literal implications for Palestinian statehood, and the 'deal of the Century' designed by Jared Kushner and David Friedman which gave the Sabbatian Israeli government the green light to substantially expand its already widespread program of building illegal Jewish-only settlements in the occupied land of the West Bank. This made a two-state 'solution' impossible by seizing all the land of a potential Palestinian homeland and that had been the plan since 1948 and then 1967 when the Arab-controlled Gaza Strip, West Bank, Sinai Peninsula and Syrian Golan Heights were occupied by Israel. All the talks about talks and road maps and delays have been buying time until the West Bank was physically occupied by Israeli real estate. Trump would have to be a monumentally ill-informed idiot not to see that this was the plan he was helping to complete. The Trump administration was in so many ways the Kushner administration which means the Netanyahu administration which means the Sabbatian administration. I understand why many opposing Cult fascism in all its forms gravitated to Trump, but he

was a crucial part of the Sabbatian plan and I will deal with this in the next chapter.

Joe Biden ('Democrat')

A barely cognitive Joe Biden took over the presidency in January, 2021, along with his fellow empty shell, Vice-President Kamala Harris, as the latest Sabbatian gofers to enter the White House. Names on the door may have changed and the 'party' – the force behind them remained the same as Zionists were appointed to a stream of pivotal areas relating to Sabbatian plans and policy. They included: Janet Yellen, Treasury Secretary, former head of the Federal Reserve, and still another ultra-Zionist running the US Treasury after Mnuchin (Trump), Lew and Geithner (Obama), and Summers and Rubin (Clinton); Anthony Blinken, Secretary of State; Wendy Sherman, Deputy Secretary of State (so that's 'Biden's' Sabbatian foreign policy sorted); Jeff Zients, White House coronavirus coordinator; Rochelle Walensky, head of the Centers for Disease Control; Rachel Levine, transgender deputy health secretary (that's 'Covid' hoax policy under control); Merrick Garland, Attorney General; Alejandro Mayorkas, Secretary of Homeland Security; Cass Sunstein, Homeland Security with responsibility for new immigration laws; Avril Haines, Director of National Intelligence; Anne Neuberger, National Security Agency cybersecurity director (note, cybersecurity); David Cohen, CIA Deputy Director; Ronald Klain, Biden's Chief of Staff (see Rahm Emanuel); Eric Lander, a 'leading geneticist', Office of Science and Technology Policy director (see Smart Grid, synthetic biology agenda); Jessica Rosenworcel, acting head of the Federal Communications Commission (FCC) which controls Smart Grid technology policy and electromagnetic communication systems including 5G. How can it be that so many pivotal positions are held by two-percent of the American population and 0.2 percent of the world population administration after administration no matter who is the president and what is the party? It's a coincidence? Of course it's not and this is why Sabbatians have built their colossal global web of interlocking 'anti-

hate' hate groups to condemn anyone who asks these glaring questions as an 'anti-Semite'. The way that Jewish people horrifically abused in Sabbatian-backed Nazi Germany are exploited to this end is stomach-turning and disgusting beyond words.

Political fusion

Sabbatian manipulation has reversed the roles of Republicans and Democrats and the same has happened in Britain with the Conservative and Labour Parties. Republicans and Conservatives were always labelled the 'right' and Democrats and Labour the 'left', but look at the policy positions now and the Democrat-Labour 'left' has moved further to the 'right' than Republicans and Conservatives under the banner of 'Woke', the Cult-created far-right tyranny. Where once the Democrat-Labour 'left' defended free speech and human rights they now seek to delete them and as I said earlier despite the 'Covid' fascism of the Jackboot Johnson Conservative government in the UK the Labour Party of leader Keir Starmer demanded even more extreme measures. The Labour Party has been very publicly absorbed by Sabbatians after a political and media onslaught against the previous leader, the weak and inept Jeremy Corbyn, over made-up allegations of 'anti-Semitism' both by him and his party. The plan was clear with this 'anti-Semite' propaganda and what was required in response was a swift and decisive 'fuck off' from Corbyn and a statement to expose the Anti-Semitism Industry (Sabbatian) attempt to silence Labour criticism of the Israeli government (Sabbatians) and purge the party of all dissent against the extremes of ultra-Zionism (Sabbatians). Instead Corbyn and his party fell to their knees and appeased the abusers which, by definition, is impossible. Appeasing one demand leads only to a new demand to be appeased until takeover is complete. Like I say – 'fuck off' would have been a much more effective policy and I have used it myself with great effect over the years when Sabbatians are on my case which is most of the time. I consider that fact a great compliment, by the way. The outcome of the Labour Party capitulation is that we now have a Sabbatian-controlled

Conservative Party 'opposed' by a Sabbatian-controlled Labour Party in a one-party Sabbatian state that hurtles towards the extremes of tyranny (the Sabbatian cult agenda). In America the situation is the same. Labour's Keir Starmer spends his days on his knees with his tongue out pointing to Tel Aviv, or I guess now Jerusalem, while Boris Johnson has an 'anti-Semitism czar' in the form of former Labour MP John Mann who keeps Starmer company on his prayer mat.

Sabbatian influence can be seen in Jewish members of the Labour Party who have been ejected for criticism of Israel including those from families that suffered in Nazi Germany. Sabbatians despise real Jewish people and target them even more harshly because it is so much more difficult to dub them 'anti-Semitic' although in their desperation they do try.

CHAPTER THREE

The Pushbacker sting

Until you realize how easy it is for your mind to be manipulated, you remain the puppet of someone else's game
Evita Ochel

I will use the presidencies of Trump and Biden to show how the manipulation of the one-party state plays out behind the illusion of political choice across the world. No two presidencies could – on the face of it – be more different and apparently at odds in terms of direction and policy.

A Renegade Mind sees beyond the obvious and focuses on outcomes and consequences and not image, words and waffle. The Cult embarked on a campaign to divide America between those who blindly support its agenda (the mentality known as 'Woke') and those who are pushing back on where the Cult and its Sabbatians want to go. This presents infinite possibilities for dividing and ruling the population by setting them at war with each other and allows a perceptual ring fence of demonisation to encircle the Pushbackers in a modern version of the Little Big Horn in 1876 when American cavalry led by Lieutenant Colonel George Custer were drawn into a trap, surrounded and killed by Native American tribes defending their land of thousands of years from being seized by the government. In this modern version the roles are reversed and it's those defending themselves from the Sabbatian government who are surrounded and the government that's seeking to destroy them. This trap was set years ago and to explain how we must return to 2016

and the emergence of Donald Trump as a candidate to be President of the United States. He set out to overcome the best part of 20 other candidates in the Republican Party before and during the primaries and was not considered by many in those early stages to have a prayer of living in the White House. The Republican Party was said to have great reservations about Trump and yet somehow he won the nomination. When you know how American politics works – politics in general – there is no way that Trump could have become the party's candidate unless the Sabbatian-controlled 'Neocons' that run the Republican Party wanted that to happen. We saw the proof in emails and documents made public by WikiLeaks that the Democratic Party hierarchy, or Democons, systematically undermined the campaign of Bernie Sanders to make sure that Sabbatian gofer Hillary Clinton won the nomination to be their presidential candidate. If the Democons could do that then the Neocons in the Republican Party could have derailed Trump in the same way. But they didn't and at that stage I began to conclude that Trump could well be the one chosen to be president. If that was the case the 'why' was pretty clear to see – the goal of dividing America between Cult agenda-supporting Wokers and Pushbackers who gravitated to Trump because he was telling them what they wanted to hear. His constituency of support had been increasingly ignored and voiceless for decades and profoundly through the eight years of Sabbatian puppet Barack Obama. Now here was someone speaking their language of pulling back from the incessant globalisation of political and economic power, the exporting of American jobs to China and elsewhere by 'American' (Sabbatian) corporations, the deletion of free speech, and the mass immigration policies that had further devastated job opportunities for the urban working class of all races and the once American heartlands of the Midwest.

Beware the forked tongue

Those people collectively sighed with relief that at last a political leader was apparently on their side, but another trait of the Renegade Mind is that you look even harder at people telling you

what you want to hear than those who are telling you otherwise. Obviously as I said earlier people wish what they want to hear to be true and genuine and they are much more likely to believe that than someone saying what they don't want to here and don't want to be true. Sales people are taught to be skilled in eliciting by calculated questioning what their customers want to hear and repeating that back to them as their own opinion to get their targets to like and trust them. Assets of the Cult are also sales people in the sense of selling perception. To read Cult manipulation you have to play the long and expanded game and not fall for the Vaudeville show of party politics. Both American parties are vehicles for the Cult and they exploit them in different ways depending on what the agenda requires at that moment. Trump and the Republicans were used to be the focus of dividing America and isolating Pushbackers to open the way for a Biden presidency to become the most extreme in American history by advancing the full-blown Woke (Cult) agenda with the aim of destroying and silencing Pushbackers now labelled Nazi Trump supporters and white supremacists.

Sabbatians wanted Trump in office for the reasons described by ultra-Zionist Saul Alinsky (1909-1972) who was promoting the Woke philosophy through 'community organising' long before anyone had heard of it. In those days it still went by its traditional name of Marxism. The reason for the manipulated Trump phenomenon was laid out in Alinsky's 1971 book, *Rules for Radicals*, which was his blueprint for overthrowing democratic and other regimes and replacing them with Sabbatian Marxism. Not surprisingly his to-do list was evident in the Sabbatian French and Russian 'Revolutions' and that in China which will become very relevant in the next chapter about the 'Covid' hoax. Among Alinsky's followers have been the deeply corrupt Barack Obama, House Speaker Nancy Pelosi and Hillary Clinton who described him as a 'hero'. All three are Sabbatian stooges with Pelosi personifying the arrogant corrupt idiocy that so widely fronts up for the Cult inner core. Predictably as a Sabbatian advocate of the 'light-bringer' Alinsky features Lucifer on the dedication page of his book as the original radical who gained

his own kingdom ('Earth' as we shall see). One of Alinsky's golden radical rules was to pick an individual and focus all attention, hatred and blame on them and not to target faceless bureaucracies and corporations. *Rules for Radicals* is really a Sabbatian handbook with its contents repeatedly employed all over the world for centuries and why wouldn't Sabbatians bring to power their designer-villain to be used as the individual on which all attention, hatred and blame was bestowed? This is what they did and the only question for me is how much Trump knew that and how much he was manipulated. A bit of both, I suspect. This was Alinsky's Trump technique from a man who died in 1972. The technique has spanned history:

Pick the target, freeze it, personalize it, polarize it. Don't try to attack abstract corporations or bureaucracies. Identify a responsible individual. Ignore attempts to shift or spread the blame.

From the moment Trump came to illusory power everything was about him. It wasn't about Republican policy or opinion, but all about Trump. Everything he did was presented in negative, derogatory and abusive terms by the Sabbatian-dominated media led by Cult operations such as CNN, MSNBC, *The New York Times* and the Jeff Bezos-owned *Washington Post* – 'Pick the target, freeze it, personalize it, polarize it.' Trump was turned into a demon to be vilified by those who hated him and a demi-god loved by those who worshipped him. This, in turn, had his supporters, too, presented as equally demonic in preparation for the punchline later down the line when Biden was about to take office. It was here's a Trump, there's a Trump, everywhere a Trump, Trump. Virtually every news story or happening was filtered through the lens of 'The Donald'. You loved him or hated him and which one you chose was said to define you as Satan's spawn or a paragon of virtue. Even supporting some Trump policies or statements and not others was enough for an assault on your character. No shades of grey were or are allowed. Everything is black and white (literally and figuratively). A Californian I knew had her head utterly scrambled by her hatred for Trump while telling people they should love each other. She was so totally consumed by

Trump Derangement Syndrome as it became to be known that this glaring contradiction would never have occurred to her. By definition anyone who criticised Trump or praised his opponents was a hero and this lady described Joe Biden as 'a kind, honest gentleman' when he's a provable liar, mega-crook and vicious piece of work to boot. Sabbatians had indeed divided America using Trump as the fall-guy and all along the clock was ticking on the consequences for his supporters.

In hock to his masters

Trump gave Sabbatians via Israel almost everything they wanted in his four years. Ask and you shall receive was the dynamic between himself and Benjamin Netanyahu orchestrated by Trump's ultra-Zionist son-in-law Jared Kushner, his ultra-Zionist Ambassador to Israel, David Friedman, and ultra-Zionist 'Israel adviser', Jason Greenblatt. The last two were central to the running and protecting from collapse of his business empire, the Trump Organisation, and colossal business failures made him forever beholding to Sabbatian networks that bailed him out. By the start of the 1990s Trump owed $4 billion to banks that he couldn't pay and almost $1billion of that was down to him personally and not his companies. This mega-disaster was the result of building two new casinos in Atlantic City and buying the enormous Taj Mahal operation which led to crippling debt payments. He had borrowed fantastic sums from 72 banks with major Sabbatian connections and although the scale of debt should have had him living in a tent alongside the highway they never foreclosed. A plan was devised to lift Trump from the mire by BT Securities Corporation and Rothschild Inc. and the case was handled by Wilber Ross who had worked for the Rothschilds for 27 years. Ross would be named US Commerce Secretary after Trump's election. Another crucial figure in saving Trump was ultra-Zionist 'investor' Carl Icahn who bought the Taj Mahal casino. Icahn was made special economic adviser on financial regulation in the Trump administration. He didn't stay long but still managed to find time to make a tidy sum of a reported $31.3 million when he sold his

holdings affected by the price of steel three days before Trump imposed a 235 percent tariff on steel imports. What amazing bits of luck these people have. Trump and Sabbatian operatives have long had a close association and his mentor and legal adviser from the early 1970s until 1986 was the dark and genetically corrupt ultra-Zionist Roy Cohn who was chief counsel to Senator Joseph McCarthy's 'communist' witch-hunt in the 1950s. *Esquire* magazine published an article about Cohn with the headline 'Don't mess with Roy Cohn'. He was described as the most feared lawyer in New York and 'a ruthless master of dirty tricks ... [with] ... more than one Mafia Don on speed dial'. Cohn's influence, contacts, support and protection made Trump a front man for Sabbatians in New York with their connections to one of Cohn's many criminal employers, the 'Russian' Sabbatian Mafia. Israel-centric media mogul Rupert Murdoch was introduced to Trump by Cohn and they started a long friendship. Cohn died in 1986 weeks after being disbarred for unethical conduct by the Appellate Division of the New York State Supreme Court. The wheels of justice do indeed run slow given the length of Cohn's crooked career.

QAnon-sense

We are asked to believe that Donald Trump with his fundamental connections to Sabbatian networks and operatives has been leading the fight to stop the Sabbatian agenda for the fascistic control of America and the world. Sure he has. A man entrapped during his years in the White House by Sabbatian operatives and whose biggest financial donor was casino billionaire Sheldon Adelson who was Sabbatian to his DNA?? Oh, do come on. Trump has been used to divide America and isolate Pushbackers on the Cult agenda under the heading of 'Trump supporters', 'insurrectionists' and 'white supremacists'. The US Intelligence/Mossad Psyop or psychological operation known as QAnon emerged during the Trump years as a central pillar in the Sabbatian campaign to lead Pushbackers into the trap set by those that wished to destroy them. I knew from the start that QAnon was a scam because I had seen the same scenario many

times before over 30 years under different names and I had written about one in particular in the books. 'Not again' was my reaction when QAnon came to the fore. The same script is pulled out every few years and a new name added to the letterhead. The story always takes the same form: 'Insiders' or 'the good guys' in the government-intelligence-military 'Deep State' apparatus were going to instigate mass arrests of the 'bad guys' which would include the Rockefellers, Rothschilds, Barack Obama, Hillary Clinton, George Soros, etc., etc. Dates are given for when the 'good guys' are going to move in, but the dates pass without incident and new dates are given which pass without incident. The central message to Pushbackers in each case is that they don't have to do anything because there is 'a plan' and it is all going to be sorted by the 'good guys' on the inside. 'Trust the plan' was a QAnon mantra when the only plan was to misdirect Pushbackers into putting their trust in a Psyop they believed to be real. Beware, beware, those who tell you what you want to hear and always check it out. Right up to Biden's inauguration QAnon was still claiming that 'the Storm' was coming and Trump would stay on as president when Biden and his cronies were arrested and jailed. It was never going to happen and of course it didn't, but what did happen as a result provided that punchline to the Sabbatian Trump/QAnon Psyop.

On January 6th, 2021, a very big crowd of Trump supporters gathered in the National Mall in Washington DC down from the Capitol Building to protest at what they believed to be widespread corruption and vote fraud that stopped Trump being re-elected for a second term as president in November, 2020. I say as someone that does not support Trump or Biden that the evidence is clear that major vote-fixing went on to favour Biden, a man with cognitive problems so advanced he can often hardly string a sentence together without reading the words written for him on the Teleprompter. Glaring ballot discrepancies included serious questions about electronic voting machines that make vote rigging a comparative cinch and hundreds of thousands of paper votes that suddenly appeared during already advanced vote counts and virtually all of

them for Biden. Early Trump leads in crucial swing states suddenly began to close and disappear. The pandemic hoax was used as the excuse to issue almost limitless numbers of mail-in ballots with no checks to establish that the recipients were still alive or lived at that address. They were sent to streams of people who had not even asked for them. Private organisations were employed to gather these ballots and who knows what they did with them before they turned up at the counts. The American election system has been manipulated over decades to become a sick joke with more holes than a Swiss cheese for the express purpose of dictating the results. Then there was the criminal manipulation of information by Sabbatian tech giants like Facebook, Twitter and Google-owned YouTube which deleted pro-Trump, anti-Biden accounts and posts while everything in support of Biden was left alone. Sabbatians wanted Biden to win because after the dividing of America it was time for full-on Woke and every aspect of the Cult agenda to be unleashed.

Hunter gatherer

Extreme Silicon Valley bias included blocking information by the *New York Post* exposing a Biden scandal that should have ended his bid for president in the final weeks of the campaign. Hunter Biden, his monumentally corrupt son, is reported to have sent a laptop to be repaired at a local store and failed to return for it. Time passed until the laptop became the property of the store for non-payment of the bill. When the owner saw what was on the hard drive he gave a copy to the FBI who did nothing even though it confirmed widespread corruption in which the Joe Biden family were using his political position, especially when he was vice president to Obama, to make multiple millions in countries around the world and most notably Ukraine and China. Hunter Biden's one-time business partner Tony Bobulinski went public when the story broke in the *New York Post* to confirm the corruption he saw and that Joe Biden not only knew what was going on he also profited from the spoils. Millions were handed over by a Chinese company with close

connections – like all major businesses in China – to the Chinese communist party of President Xi Jinping. Joe Biden even boasted at a meeting of the Cult's World Economic Forum that as vice president he had ordered the government of Ukraine to fire a prosecutor. What he didn't mention was that the same man just happened to be investigating an energy company which was part of Hunter Biden's corrupt portfolio. The company was paying him big bucks for no other reason than the influence his father had. Overnight Biden's presidential campaign should have been over given that he had lied publicly about not knowing what his son was doing. Instead almost the entire Sabbatian-owned mainstream media and Sabbatian-owned Silicon Valley suppressed circulation of the story. This alone went a mighty way to rigging the election of 2020. Cult assets like Mark Zuckerberg at Facebook also spent hundreds of millions to be used in support of Biden and vote 'administration'.

The Cult had used Trump as the focus to divide America and was now desperate to bring in moronic, pliable, corrupt Biden to complete the double-whammy. No way were they going to let little things like the will of the people thwart their plan. Silicon Valley widely censored claims that the election was rigged because it *was* rigged. For the same reason anyone claiming it was rigged was denounced as a 'white supremacist' including the pathetically few Republican politicians willing to say so. Right across the media where the claim was mentioned it was described as a 'false claim' even though these excuses for 'journalists' would have done no research into the subject whatsoever. Trump won seven million more votes than any sitting president had ever achieved while somehow a cognitively-challenged soon to be 78-year-old who was hidden away from the public for most of the campaign managed to win more votes than any presidential candidate in history. It makes no sense. You only had to see election rallies for both candidates to witness the enthusiasm for Trump and the apathy for Biden. Tens of thousands would attend Trump events while Biden was speaking in empty car parks with often only television crews attending and framing their shots to hide the fact that no one was there. It was pathetic to see

footage come to light of Biden standing at a podium making speeches only to TV crews and party fixers while reading the words written for him on massive Teleprompter screens. So, yes, those protestors on January 6th had a point about election rigging, but some were about to walk into a trap laid for them in Washington by the Cult Deep State and its QAnon Psyop. This was the Capitol Hill riot ludicrously dubbed an 'insurrection'.

The spider and the fly

Renegade Minds know there are not two 'sides' in politics, only one side, the Cult, working through all 'sides'. It's a stage show, a puppet show, to direct the perceptions of the population into focusing on diversions like parties and candidates while missing the puppeteers with their hands holding all the strings. The Capitol Hill 'insurrection' brings us back to the Little Big Horn. Having created two distinct opposing groupings – Woke and Pushbackers – the trap was about to be sprung. Pushbackers were to be encircled and isolated by associating them all in the public mind with Trump and then labelling Trump as some sort of Confederate leader. I knew immediately that the Capitol riot was a set-up because of two things. One was how easy the rioters got into the building with virtually no credible resistance and secondly I could see – as with the 'Covid' hoax in the West at the start of 2020 – how the Cult could exploit the situation to move its agenda forward with great speed. My experience of Cult techniques and activities over more than 30 years has showed me that while they do exploit situations they haven't themselves created this never happens with events of fundamental agenda significance. Every time major events giving cultists the excuse to rapidly advance their plan you find they are manipulated into being for the specific reason of providing that excuse – Problem-Reaction-Solution. Only a tiny minority of the huge crowd of Washington protestors sought to gain entry to the Capitol by smashing windows and breaching doors. That didn't matter. The whole crowd and all Pushbackers, even if they did not support Trump, were going to be lumped together as dangerous

insurrectionists and conspiracy theorists. The latter term came into widespread use through a CIA memo in the 1960s aimed at discrediting those questioning the nonsensical official story of the Kennedy assassination and it subsequently became widely employed by the media. It's still being used by inept 'journalists' with no idea of its origin to discredit anyone questioning anything that authority claims to be true. When you are perpetrating a conspiracy you need to discredit the very word itself even though the dictionary definition of conspiracy is merely 'the activity of secretly planning with other people to do something bad or illegal' and 'a general agreement to keep silent about a subject for the purpose of keeping it secret'. On that basis there are conspiracies almost wherever you look. For obvious reasons the Cult and its lapdog media have to claim there are no conspiracies even though the word appears in state laws as with conspiracy to defraud, to murder, and to corrupt public morals.

Agent provocateurs are widely used by the Cult Deep State to manipulate genuine people into acting in ways that suit the desired outcome. By genuine in this case I mean protestors genuinely supporting Trump and claims that the election was stolen. In among them, however, were agents of the state wearing the garb of Trump supporters and QAnon to pump-prime the Capital riot which some genuine Trump supporters naively fell for. I described the situation as 'Come into my parlour said the spider to the fly'. Leaflets appeared through the Woke paramilitary arm Antifa, the anti-fascist fascists, calling on supporters to turn up in Washington looking like Trump supporters even though they hated him. Some of those arrested for breaching the Capitol Building were sourced to Antifa and its stable mate Black Lives Matter. Both organisations are funded by Cult billionaires and corporations. One man charged for the riot was according to his lawyer a former FBI agent who had held top secret security clearance for 40 years. Attorney Thomas Plofchan said of his client, 66-year-old Thomas Edward Caldwell:

He has held a Top Secret Security Clearance since 1979 and has undergone multiple Special Background Investigations in support of his clearances. After retiring from the Navy, he

worked as a section chief for the Federal Bureau of Investigation from 2009-2010 as a GS-12 [mid-level employee].

He also formed and operated a consulting firm performing work, often classified, for U.S government customers including the US. Drug Enforcement Agency, Department of Housing and Urban Development, the US Coast Guard, and the US Army Personnel Command.

A judge later released Caldwell pending trial in the absence of evidence about a conspiracy or that he tried to force his way into the building. *The New York Post* reported a 'law enforcement source' as saying that 'at least two known Antifa members were spotted' on camera among Trump supporters during the riot while one of the rioters arrested was John Earle Sullivan, a seriously extreme Black Lives Matter Trump-hater from Utah who was previously arrested and charged in July, 2020, over a BLM-Antifa riot in which drivers were threatened and one was shot. Sullivan is the founder of Utah-based Insurgence USA which is an affiliate of the Cult-created-and-funded Black Lives Matter movement. Footage appeared and was then deleted by Twitter of Trump supporters calling out Antifa infiltrators and a group was filmed changing into pro-Trump clothing before the riot. Security at the building was *pathetic* – as planned. Colonel Leroy Fletcher Prouty, a man with long experience in covert operations working with the US security apparatus, once described the tell-tale sign to identify who is involved in an assassination. He said:

No one has to direct an assassination – it happens. The active role is played secretly by permitting it to happen. This is the greatest single clue. Who has the power to call off or reduce the usual security precautions?

This principle applies to many other situations and certainly to the Capitol riot of January 6th, 2021.

The sting

With such a big and potentially angry crowd known to be gathering near the Capitol the security apparatus would have had a major police detail to defend the building with National Guard troops on

standby given the strength of feeling among people arriving from all over America encouraged by the QAnon Psyop and statements by Donald Trump. Instead Capitol Police 'security' was flimsy, weak, and easily breached. The same number of officers was deployed as on a regular day and that is a blatant red flag. They were not staffed or equipped for a possible riot that had been an obvious possibility in the circumstances. No protective and effective fencing worth the name was put in place and there were no contingency plans. The whole thing was basically a case of standing aside and waving people in. Once inside police mostly backed off apart from one Capitol police officer who ridiculously shot dead unarmed Air Force veteran protestor Ashli Babbitt without a warning as she climbed through a broken window. The 'investigation' refused to name or charge the officer after what must surely be considered a murder in the circumstances. They just lifted a carpet and swept. The story was endlessly repeated about five people dying in the 'armed insurrection' when there was no report of rioters using weapons. Apart from Babbitt the other four died from a heart attack, strokes and apparently a drug overdose. Capitol police officer Brian Sicknick was reported to have died after being bludgeoned with a fire extinguisher when he was alive after the riot was over and died later of what the Washington Medical Examiner's Office said was a stroke. Sicknick had no external injuries. The lies were delivered like rapid fire. There was a narrative to build with incessant repetition of the lie until the lie became the accepted 'everybody knows that' truth. The 'Big Lie' technique of Nazi Propaganda Minister Joseph Goebbels is constantly used by the Cult which was behind the Nazis and is today behind the 'Covid' and 'climate change' hoaxes. Goebbels said:

If you tell a lie big enough and keep repeating it, people will eventually come to believe it. The lie can be maintained only for such time as the State can shield the people from the political, economic and/or military consequences of the lie. It thus becomes vitally important for the State to use all of its powers to repress dissent, for the truth is the mortal enemy of the lie, and thus by extension, the truth is the greatest enemy of the State.

Most protestors had a free run of the Capitol Building. This allowed pictures to be taken of rioters in iconic parts of the building including the Senate chamber which could be used as propaganda images against all Pushbackers. One Congresswoman described the scene as 'the worst kind of non-security anybody could ever imagine'. Well, the first part was true, but someone obviously did imagine it and made sure it happened. Some photographs most widely circulated featured people wearing QAnon symbols and now the Psyop would be used to dub all QAnon followers with the ubiquitous fit-all label of 'white supremacist' and 'insurrectionists'. When a Muslim extremist called Noah Green drove his car at two police officers at the Capitol Building killing one in April, 2021, there was no such political and media hysteria. They were just disappointed he wasn't white.

The witch-hunt

Government prosecutor Michael Sherwin, an aggressive, dark-eyed, professional Rottweiler led the 'investigation' and to call it over the top would be to understate reality a thousand fold. Hundreds were tracked down and arrested for the crime of having the wrong political views and people were jailed who had done nothing more than walk in the building, committed no violence or damage to property, took a few pictures and left. They were labelled a 'threat to the Republic' while Biden sat in the White House signing executive orders written for him that were dismantling 'the Republic'. Even when judges ruled that a mother and son should not be in jail the government kept them there. Some of those arrested have been badly beaten by prison guards in Washington and lawyers for one man said he suffered a fractured skull and was made blind in one eye. Meanwhile a woman is shot dead for no reason by a Capitol Police officer and we are not allowed to know who he is never mind what has happened to him although that will be *nothing*. The Cult's QAnon/Trump sting to identify and isolate Pushbackers and then target them on the road to crushing and deleting them was a resounding success. You would have thought the Russians had

invaded the building at gunpoint and lined up senators for a firing squad to see the political and media reaction. Congresswoman Alexandria Ocasio-Cortez is a child in a woman's body, a terrible-twos, me, me, me, Woker narcissist of such proportions that words have no meaning. She said she thought she was going to die when 'insurrectionists' banged on her office door. It turned out she wasn't even in the Capitol Building when the riot was happening and the 'banging' was a Capitol Police officer. She referred to herself as a 'survivor' which is an insult to all those true survivors of violent and sexual abuse while she lives her pampered and privileged life talking drivel for a living. Her Woke colleague and fellow mega-narcissist Rashida Tlaib broke down describing the devastating effect on her, too, of *not being* in the building when the rioters were there. Ocasio-Cortez and Tlaib are members of a fully-Woke group of Congresswomen known as 'The Squad' along with Ilhan Omar and Ayanna Pressley. The Squad from what I can see can be identified by its vehement anti-white racism, anti-white men agenda, and, as always in these cases, the absence of brain cells on active duty.

The usual suspects were on the riot case immediately in the form of Democrat ultra-Zionist senators and operatives Chuck Schumer and Adam Schiff demanding that Trump be impeached for 'his part in the insurrection'. The same pair of prats had led the failed impeachment of Trump over the invented 'Russia collusion' nonsense which claimed Russia had helped Trump win the 2016 election. I didn't realise that Tel Aviv had been relocated just outside Moscow. I must find an up-to-date map. The Russia hoax was a Sabbatian operation to keep Trump occupied and impotent and to stop any rapport with Russia which the Cult wants to retain as a perceptual enemy to be pulled out at will. Puppet Biden began attacking Russia when he came to office as the Cult seeks more upheaval, division and war across the world. A two-year stage show 'Russia collusion inquiry' headed by the not-very-bright former 9/11 FBI chief Robert Mueller, with support from 19 lawyers, 40 FBI agents plus intelligence analysts, forensic accountants and other

staff, devoured tens of millions of dollars and found no evidence of Russia collusion which a ten-year-old could have told them on day one. Now the same moronic Schumer and Schiff wanted a second impeachment of Trump over the Capitol 'insurrection' (riot) which the arrested development of Schumer called another 'Pearl Harbor' while others compared it with 9/11 in which 3,000 died and, in the case of CNN, with the Rwandan genocide in the 1990s in which an estimated 500,000 to 600,000 were murdered, between 250, 000 and 500,000 women were raped, and populations of whole towns were hacked to death with machetes. To make those comparisons purely for Cult political reasons is beyond insulting to those that suffered and lost their lives and confirms yet again the callous inhumanity that we are dealing with. Schumer is a monumental idiot and so is Schiff, but they serve the Cult agenda and do whatever they're told so they get looked after. Talking of idiots – another inane man who spanned the Russia and Capitol impeachment attempts was Senator Eric Swalwell who had the nerve to accuse Trump of collusion with the Russians while sleeping with a Chinese spy called Christine Fang or 'Fang Fang' which is straight out of a Bond film no doubt starring Klaus Schwab as the bloke living on a secret island and controlling laser weapons positioned in space and pointing at world capitals. Fang Fang plays the part of Bond's infiltrator girlfriend which I'm sure she would enjoy rather more than sharing a bed with the brainless Swalwell, lying back and thinking of China. The FBI eventually warned Swalwell about Fang Fang which gave her time to escape back to the Chinese dictatorship. How very thoughtful of them. The second Trump impeachment also failed and hardly surprising when an impeachment is supposed to remove a sitting president and by the time it happened Trump was no longer president. These people are running your country America, well, officially anyway. Terrifying isn't it?

Outcomes tell the story - always

The outcome of all this – and it's the *outcome* on which Renegade Minds focus, not the words – was that a vicious, hysterical and

obviously pre-planned assault was launched on Pushbackers to censor, silence and discredit them and even targeted their right to earn a living. They have since been condemned as 'domestic terrorists' that need to be treated like Al-Qaeda and Islamic State. 'Domestic terrorists' is a label the Cult has been trying to make stick since the period of the Oklahoma bombing in 1995 which was blamed on 'far-right domestic terrorists'. If you read *The Trigger* you will see that the bombing was clearly a Problem-Reaction-Solution carried out by the Deep State during a Bill Clinton administration so corrupt that no dictionary definition of the term would even nearly suffice. Nearly 30, 000 troops were deployed from all over America to the empty streets of Washington for Biden's inauguration. Ten thousand of them stayed on with the pretext of protecting the capital from insurrectionists when it was more psychological programming to normalise the use of the military in domestic law enforcement in support of the Cult plan for a police-military state. Biden's fascist administration began a purge of 'wrong-thinkers' in the military which means anyone that is not on board with Woke. The Capitol Building was surrounded by a fence with razor wire and the Land of the Free was further symbolically and literally dismantled. The circle was completed with the installation of Biden and the exploitation of the QAnon Psyop.

America had never been so divided since the civil war of the 19th century, Pushbackers were isolated and dubbed terrorists and now, as was always going to happen, the Cult immediately set about deleting what little was left of freedom and transforming American society through a swish of the hand of the most controlled 'president' in American history leading (officially at least) the most extreme regime since the country was declared an independent state on July 4th, 1776. Biden issued undebated, dictatorial executive orders almost by the hour in his opening days in office across the whole spectrum of the Cult wish-list including diluting controls on the border with Mexico allowing thousands of migrants to illegally enter the United States to transform the demographics of America and import an election-changing number of perceived Democrat

voters. Then there were Biden deportation amnesties for the already illegally resident (estimated to be as high as 20 or even 30 million). A bill before Congress awarded American citizenship to anyone who could prove they had worked in agriculture for just 180 days in the previous two years as 'Big Ag' secured its slave labour long-term. There were the plans to add new states to the union such as Puerto Rico and making Washington DC a state. They are all parts of a plan to ensure that the Cult-owned Woke Democrats would be permanently in power.

Border – what border?

I have exposed in detail in other books how mass immigration into the United States and Europe is the work of Cult networks fuelled by the tens of billions spent to this and other ends by George Soros and his global Open Society (open borders) Foundations. The impact can be seen in America alone where the population has increased by *100 million* in little more than 30 years mostly through immigration. I wrote in *The Answer* that the plan was to have so many people crossing the southern border that the numbers become unstoppable and we are now there under Cult-owned Biden. El Salvador in Central America puts the scale of what is happening into context. A third of the population now lives in the United States, much of it illegally, and many more are on the way. The methodology is to crush Central and South American countries economically and spread violence through machete-wielding psychopathic gangs like MS-13 based in El Salvador and now operating in many American cities. Biden-imposed lax security at the southern border means that it is all but open. He said before his 'election' that he wanted to see a surge towards the border if he became president and that was the green light for people to do just that after election day to create the human disaster that followed for both America and the migrants. When that surge came the imbecilic Alexandria Ocasio-Cortez said it wasn't a 'surge' because they are 'children, not insurgents' and the term 'surge' (used by Biden) was a claim of 'white supremacists'.

This disingenuous lady may one day enter the realm of the most basic intelligence, but it won't be any time soon.

Sabbatians and the Cult are in the process of destroying America by importing violent people and gangs in among the genuine to terrorise American cities and by overwhelming services that cannot cope with the sheer volume of new arrivals. Something similar is happening in Europe as Western society in general is targeted for demographic and cultural transformation and upheaval. The plan demands violence and crime to create an environment of intimidation, fear and division and Soros has been funding the election of district attorneys across America who then stop prosecuting many crimes, reduce sentences for violent crimes and free as many violent criminals as they can. Sabbatians are creating the chaos from which order – their order – can respond in a classic Problem-Reaction-Solution. A Freemasonic moto says 'Ordo Ab Chao' (Order out of Chaos) and this is why the Cult is constantly creating chaos to impose a new 'order'. Here you have the reason the Cult is constantly creating chaos. The 'Covid' hoax can be seen with those entering the United States by plane being forced to take a 'Covid' test while migrants flooding through southern border processing facilities do not. Nothing is put in the way of mass migration and if that means ignoring the government's own 'Covid' rules then so be it. They know it's all bullshit anyway. Any pushback on this is denounced as 'racist' by Wokers and Sabbatian fronts like the ultra-Zionist Anti-Defamation League headed by the appalling Jonathan Greenblatt which at the same time argues that Israel should not give citizenship and voting rights to more Palestinian Arabs or the 'Jewish population' (in truth the Sabbatian network) will lose control of the country.

Society-changing numbers

Biden's masters have declared that countries like El Salvador are so dangerous that their people must be allowed into the United States for humanitarian reasons when there are fewer murders in large parts of many Central American countries than in US cities like

Baltimore. That is not to say Central America cannot be a dangerous place and Cult-controlled American governments have been making it so since way back, along with the dismantling of economies, in a long-term plan to drive people north into the United States. Parts of Central America are very dangerous, but in other areas the story is being greatly exaggerated to justify relaxing immigration criteria. Migrants are being offered free healthcare and education in the United States as another incentive to head for the border and there is no requirement to be financially independent before you can enter to prevent the resources of America being drained. You can't blame migrants for seeking what they believe will be a better life, but they are being played by the Cult for dark and nefarious ends. The numbers since Biden took office are huge. In February, 2021, more than 100,000 people were known to have tried to enter the US illegally through the southern border (it was 34,000 in the same month in 2020) and in March it was 170,000 – a 418 percent increase on March, 2020. These numbers are only known people, not the ones who get in unseen. The true figure for migrants illegally crossing the border in a single month was estimated by one congressman at 250,000 and that number will only rise under Biden's current policy. Gangs of murdering drug-running thugs that control the Mexican side of the border demand money – thousands of dollars – to let migrants cross the Rio Grande into America. At the same time gun battles are breaking out on the border several times a week between rival Mexican drug gangs (which now operate globally) who are equipped with sophisticated military-grade weapons, grenades and armoured vehicles. While the Capitol Building was being 'protected' from a non-existent 'threat' by thousands of troops, and others were still deployed at the time in the Cult Neocon war in Afghanistan, the southern border of America was left to its fate. This is not incompetence, it is cold calculation.

By March, 2021, there were 17,000 unaccompanied children held at border facilities and many of them are ensnared by people traffickers for paedophile rings and raped on their journey north to America. This is not conjecture – this is fact. Many of those designated

children are in reality teenage boys or older. Meanwhile Wokers posture their self-purity for encouraging poor and tragic people to come to America and face this nightmare both on the journey and at the border with the disgusting figure of House Speaker Nancy Pelosi giving disingenuous speeches about caring for migrants. The woman's evil. Wokers condemned Trump for having children in cages at the border (so did Obama, *Shhhh*), but now they are sleeping on the floor without access to a shower with one border facility 729 percent over capacity. The Biden insanity even proposed flying migrants from the southern border to the northern border with Canada for 'processing'. The whole shambles is being overseen by ultra-Zionist Secretary of Homeland Security, the moronic liar Alejandro Mayorkas, who banned news cameras at border facilities to stop Americans seeing what was happening. Mayorkas said there was not a ban on news crews; it was just that they were not allowed to film. Alongside him at Homeland Security is another ultra-Zionist Cass Sunstein appointed by Biden to oversee new immigration laws. Sunstein despises conspiracy researchers to the point where he suggests they should be banned or *taxed* for having such views. The man is not bonkers or anything. He's perfectly well-adjusted, but adjusted to what is the question. Criticise what is happening and you are a 'white supremacist' when earlier non-white immigrants also oppose the numbers which effect their lives and opportunities. Black people in poor areas are particularly damaged by uncontrolled immigration and the increased competition for work opportunities with those who will work for less. They are also losing voting power as Hispanics become more dominant in former black areas. It's a downward spiral for them while the billionaires behind the policy drone on about how much they care about black people and 'racism'. None of this is about compassion for migrants or black people – that's just wind and air. Migrants are instead being mercilessly exploited to transform America while the countries they leave are losing their future and the same is true in Europe. Mass immigration may now be the work of Woke Democrats, but it can be traced back to the 1986 Immigration Reform and Control Act (it

wasn't) signed into law by Republican hero President Ronald Reagan which gave amnesty to millions living in the United States illegally and other incentives for people to head for the southern border. Here we have the one-party state at work again.

Save me syndrome

Almost every aspect of what I have been exposing as the Cult agenda was on display in even the first days of 'Biden' with silencing of Pushbackers at the forefront of everything. A Renegade Mind will view the Trump years and QAnon in a very different light to their supporters and advocates as the dots are connected. The QAnon/Trump Psyop has given the Cult all it was looking for. We may not know how much, or little, that Trump realised he was being used, but that's a side issue. This pincer movement produced the desired outcome of dividing America and having Pushbackers isolated. To turn this around we have to look at new routes to empowerment which do not include handing our power to other people and groups through what I will call the 'Save Me Syndrome' – 'I want someone else to do it so that I don't have to'. We have seen this at work throughout human history and the QAnon/Trump Psyop is only the latest incarnation alongside all the others. Religion is an obvious expression of this when people look to a 'god' or priest to save them or tell them how to be saved and then there are 'save me' politicians like Trump. Politics is a diversion and not a 'saviour'. It is a means to block positive change, not make it possible.

Save Me Syndrome always comes with the same repeating theme of handing your power to whom or what you believe will save you while your real 'saviour' stares back from the mirror every morning. Renegade Minds are constantly vigilant in this regard and always asking the question 'What can I do?' rather than 'What can someone else do for me?' Gandhi was right when he said: 'You must be the change you want to see in the world.' We are indeed the people we have been waiting for. We are presented with a constant raft of reasons to concede that power to others and forget where the real power is. Humanity has the numbers and the Cult does not. It has to

use diversion and division to target the unstoppable power that comes from unity. Religions, governments, politicians, corporations, media, QAnon, are all different manifestations of this power-diversion and dilution. Refusing to give your power to governments and instead handing it to Trump and QAnon is not to take a new direction, but merely to recycle the old one with new names on the posters. I will explore this phenomenon as we proceed and how to break the cycles and recycles that got us here through the mists of repeating perception and so repeating history.

For now we shall turn to the most potent example in the entire human story of the consequences that follow when you give your power away. I am talking, of course, of the 'Covid' hoax.

CHAPTER FOUR

'Covid': Calculated catastrophe

Facts are threatening to those invested in fraud
DaShanne Stokes

We can easily unravel the real reason for the 'Covid pandemic' hoax by employing the Renegade Mind methodology that I have outlined this far. We'll start by comparing the long-planned Cult outcome with the 'Covid pandemic' outcome. Know the outcome and you'll see the journey.

I have highlighted the plan for the Hunger Games Society which has been in my books for so many years with the very few controlling the very many through ongoing dependency. To create this dependency it is essential to destroy independent livelihoods, businesses and employment to make the population reliant on the state (the Cult) for even the basics of life through a guaranteed pittance income. While independence of income remained these Cult ambitions would be thwarted. With this knowledge it was easy to see where the 'pandemic' hoax was going once talk of 'lockdowns' began and the closing of all but perceived 'essential' businesses to 'save' us from an alleged 'deadly virus'. Cult corporations like Amazon and Walmart were naturally considered 'essential' while mom and pop shops and stores had their doors closed by fascist decree. As a result with every new lockdown and new regulation more small and medium, even large businesses not owned by the Cult, went to the wall while Cult giants and their frontmen and women grew financially fatter by the second. Mom and pop were

denied an income and the right to earn a living and the wealth of people like Jeff Bezos (Amazon), Mark Zuckerberg (Facebook) and Sergei Brin and Larry Page (Google/Alphabet) have reached record levels. The Cult was increasing its own power through further dramatic concentrations of wealth while the competition was being destroyed and brought into a state of dependency. Lockdowns have been instigated to secure that very end and were never anything to do with health. My brother Paul spent 45 years building up a bus repair business, but lockdowns meant buses were running at a fraction of normal levels for months on end. Similar stories can told in their hundreds of millions worldwide. Efforts of a lifetime coldly destroyed by Cult multi-billionaires and their lackeys in government and law enforcement who continued to earn their living from the taxation of the people while denying the right of the same people to earn theirs. How different it would have been if those making and enforcing these decisions had to face the same financial hardships of those they affected, but they never do.

Gates of Hell

Behind it all in the full knowledge of what he is doing and why is the psychopathic figure of Cult operative Bill Gates. His puppet Tedros at the World Health Organization declared 'Covid' a pandemic in March, 2020. The WHO had changed the definition of a 'pandemic' in 2009 just a month before declaring the 'swine flu pandemic' which would not have been so under the previous definition. The same applies to 'Covid'. The definition had included… 'an infection by an infectious agent, occurring simultaneously in different countries, with a significant mortality rate relative to the proportion of the population infected'. The new definition removed the need for 'significant mortality'. The 'pandemic' has been fraudulent even down to the definition, but Gates demanded economy-destroying lockdowns, school closures, social distancing, mandatory masks, a 'vaccination' for every man, woman and child on the planet and severe consequences and restrictions for those that refused. Who gave him this power? The

Cult did which he serves like a little boy in short trousers doing what his daddy tells him. He and his psychopathic missus even smiled when they said that much worse was to come (what they knew was planned to come). Gates responded in the matter-of-fact way of all psychopaths to a question about the effect on the world economy of what he was doing:

> Well, it won't go to zero but it will shrink. Global GDP is probably going to take the biggest hit ever [Gates was smiling as he said this] … in my lifetime this will be the greatest economic hit. But you don't have a choice. People act as if you have a choice. People don't feel like going to the stadium when they might get infected … People are deeply affected by seeing these stats, by knowing they could be part of the transmission chain, old people, their parents and grandparents, could be affected by this, and so you don't get to say ignore what is going on here.
>
> There will be the ability to open up, particularly in rich countries, if things are done well over the next few months, but for the world at large normalcy only returns when we have largely vaccinated the entire population.

The man has no compassion or empathy. How could he when he's a psychopath like all Cult players? My own view is that even beyond that he is very seriously mentally ill. Look in his eyes and you can see this along with his crazy flailing arms. You don't do what he has done to the world population since the start of 2020 unless you are mentally ill and at the most extreme end of psychopathic. You especially don't do it when to you know, as we shall see, that cases and deaths from 'Covid' are fakery and a product of monumental figure massaging. 'These stats' that Gates referred to are based on a 'test' that's not testing for the 'virus' as he has known all along. He made his fortune with big Cult support as an infamously ruthless software salesman and now buys global control of 'health' (death) policy without the population he affects having any say. It's a breathtaking outrage. Gates talked about people being deeply affected by fear of 'Covid' when that was because of *him* and his global network lying to them minute-by-minute supported by a lying media that he seriously influences and funds to the tune of hundreds of millions. He's handed big sums to media operations including the BBC, NBC, Al Jazeera, Univision, *PBS NewsHour*,

ProPublica, National Journal, The Guardian, The Financial Times, The Atlantic, Texas Tribune, USA Today publisher Gannett, *Washington Monthly, Le Monde,* Center for Investigative Reporting, Pulitzer Center on Crisis Reporting, National Press Foundation, International Center for Journalists, Solutions Journalism Network, the Poynter Institute for Media Studies, and many more. Gates is everywhere in the 'Covid' hoax and the man must go to prison – or a mental facility – for the rest of his life and his money distributed to those he has taken such enormous psychopathic pleasure in crushing.

The Muscle

The Hunger Games global structure demands a police-military state – a fusion of the two into one force – which viciously imposes the will of the Cult on the population and protects the Cult from public rebellion. In that regard, too, the 'Covid' hoax just keeps on giving. Often unlawful, ridiculous and contradictory 'Covid' rules and regulations have been policed across the world by moronic automatons and psychopaths made faceless by face-nappy masks and acting like the Nazi SS and fascist blackshirts and brownshirts of Hitler and Mussolini. The smallest departure from the rules decreed by the psychos in government and their clueless gofers were jumped upon by the face-nappy fascists. Brutality against public protestors soon became commonplace even on girls, women and old people as the brave men with the batons – the Face-Nappies as I call them – broke up peaceful protests and handed out fines like confetti to people who couldn't earn a living let alone pay hundreds of pounds for what was once an accepted human right. Robot Face-Nappies of Nottingham police in the English East Midlands fined one group £11,000 for attending a child's birthday party. For decades I charted the transformation of law enforcement as genuine, decent officers were replaced with psychopaths and the brain dead who would happily and brutally do whatever their masters told them. Now they were let loose on the public and I would emphasise the point that none of this just happened. The step-by-step change in the dynamic between police and public was orchestrated from the shadows by

those who knew where this was all going and the same with the perceptual reframing of those in all levels of authority and official administration through 'training courses' by organisations such as Common Purpose which was created in the late 1980s and given a massive boost in Blair era Britain until it became a global phenomenon. Supposed public 'servants' began to view the population as the enemy and the same was true of the police. This was the start of the explosion of behaviour manipulation organisations and networks preparing for the all-war on the human psyche unleashed with the dawn of 2020. I will go into more detail about this later in the book because it is a core part of what is happening.

Police desecrated beauty spots to deter people gathering and arrested women for walking in the countryside alone 'too far' from their homes. We had arrogant, clueless sergeants in the Isle of Wight police where I live posting on Facebook what they insisted the population must do or else. A schoolmaster sergeant called Radford looked young enough for me to ask if his mother knew he was out, but he was posting what he *expected* people to do while a Sergeant Wilkinson boasted about fining lads for meeting in a McDonald's car park where they went to get a lockdown takeaway. Wilkinson added that he had even cancelled their order. What a pair of prats these people are and yet they have increasingly become the norm among Jackboot Johnson's Yellowshirts once known as the British police. This was the theme all over the world with police savagery common during lockdown protests in the United States, the Netherlands, and the fascist state of Victoria in Australia under its tyrannical and again moronic premier Daniel Andrews. Amazing how tyrannical and moronic tend to work as a team and the same combination could be seen across America as arrogant, narcissistic Woke governors and mayors such as Gavin Newsom (California), Andrew Cuomo (New York), Gretchen Whitmer (Michigan), Lori Lightfoot (Chicago) and Eric Garcetti (Los Angeles) did their Nazi and Stalin impressions with the full support of the compliant brutality of their enforcers in uniform as they arrested small business owners defying

fascist shutdown orders and took them to jail in ankle shackles and handcuffs. This happened to bistro owner Marlena Pavlos-Hackney in Gretchen Whitmer's fascist state of Michigan when police arrived to enforce an order by a state-owned judge for 'putting the community at risk' at a time when other states like Texas were dropping restrictions and migrants were pouring across the southern border without any 'Covid' questions at all. I'm sure there are many officers appalled by what they are ordered to do, but not nearly enough of them. If they were truly appalled they would not do it. As the months passed every opportunity was taken to have the military involved to make their presence on the streets ever more familiar and 'normal' for the longer-term goal of police-military fusion.

Another crucial element to the Hunger Games enforcement network has been encouraging the public to report neighbours and others for 'breaking the lockdown rules'. The group faced with £11,000 in fines at the child's birthday party would have been dobbed-in by a neighbour with a brain the size of a pea. The technique was most famously employed by the Stasi secret police in communist East Germany who had public informants placed throughout the population. A police chief in the UK says his force doesn't need to carry out 'Covid' patrols when they are flooded with so many calls from the public reporting other people for visiting the beach. Dorset police chief James Vaughan said people were so enthusiastic about snitching on their fellow humans they were now operating as an auxiliary arm of the police: 'We are still getting around 400 reports a week from the public, so we will respond to reports …We won't need to be doing hotspot patrols because people are very quick to pick the phone up and tell us.' Vaughan didn't say that this is a pillar of all tyrannies of whatever complexion and the means to hugely extend the reach of enforcement while spreading distrust among the people and making them wary of doing anything that might get them reported. Those narcissistic Isle of Wight sergeants Radford and Wilkinson never fail to add a link to their Facebook posts where the public can inform on their fellow slaves.

Neither would be self-aware enough to realise they were imitating the Stasi which they might well never have heard of. Government psychologists that I will expose later laid out a policy to turn communities against each other in the same way.

A coincidence? Yep, and I can knit fog

I knew from the start of the alleged pandemic that this was a Cult operation. It presented limitless potential to rapidly advance the Cult agenda and exploit manipulated fear to demand that every man, woman and child on the planet was 'vaccinated' in a process never used on humans before which infuses self-replicating *synthetic* material into human cells. Remember the plan to transform the human body from a biological to a synthetic biological state. I'll deal with the 'vaccine' (that's not actually a vaccine) when I focus on the genetic agenda. Enough to say here that mass global 'vaccination' justified by this 'new virus' set alarms ringing after 30 years of tracking these people and their methods. The 'Covid' hoax officially beginning in China was also a big red flag for reasons I will be explaining. The agenda potential was so enormous that I could dismiss any idea that the 'virus' appeared naturally. Major happenings with major agenda implications never occur without Cult involvement in making them happen. My questions were twofold in early 2020 as the media began its campaign to induce global fear and hysteria: Was this alleged infectious agent released on purpose by the Cult or did it even exist at all? I then did what I always do in these situations. I sat, observed and waited to see where the evidence and information would take me. By March and early April synchronicity was strongly – and ever more so since then – pointing me in the direction of *there is no 'virus'*. I went public on that with derision even from swathes of the alternative media that voiced a scenario that the Chinese government released the 'virus' in league with Deep State elements in the United States from a top-level bio-lab in Wuhan where the 'virus' is said to have first appeared. I looked at that possibility, but I didn't buy it for several reasons. Deaths from the 'virus' did not in any way match what they

would have been with a 'deadly bioweapon' and it is much more effective if you sell the *illusion* of an infectious agent rather than having a real one unless you can control through injection who has it and who doesn't. Otherwise you lose control of events. A made-up 'virus' gives you a blank sheet of paper on which you can make it do whatever you like and have any symptoms or mutant 'variants' you choose to add while a real infectious agent would limit you to what it actually does. A phantom disease allows you to have endless ludicrous 'studies' on the 'Covid' dollar to widen the perceived impact by inventing ever more 'at risk' groups including one study which said those who walk slowly may be almost four times more likely to die from the 'virus'. People are in psychiatric wards for less.

A real 'deadly bioweapon' can take out people in the hierarchy that are not part of the Cult, but essential to its operation. Obviously they don't want that. Releasing a real disease means you immediately lose control of it. Releasing an illusory one means you don't. Again it's vital that people are extra careful when dealing with what they want to hear. A bioweapon unleashed from a Chinese laboratory in collusion with the American Deep State may fit a conspiracy narrative, but is it true? Would it not be far more effective to use the excuse of a 'virus' to justify the real bioweapon – the 'vaccine'? That way your disease agent does not have to be transmitted and arrives directly through a syringe. I saw a French virologist Luc Montagnier quoted in the alternative media as saying he had discovered that the alleged 'new' severe acute respiratory syndrome coronavirus , or SARS-CoV-2, was made artificially and included elements of the human immunodeficiency 'virus' (HIV) and a parasite that causes malaria. SARS-CoV-2 is alleged to trigger an alleged illness called Covid-19. I remembered Montagnier's name from my research years before into claims that an HIV 'retrovirus' causes AIDs – claims that were demolished by Berkeley virologist Peter Duesberg who showed that no one had ever proved that HIV causes acquired immunodeficiency syndrome or AIDS. Claims that become accepted as fact, publicly and medically, with no proof whatsoever are an ever-recurring story that profoundly applies to

'Covid'. Nevertheless, despite the lack of proof, Montagnier's team at the Pasteur Institute in Paris had a long dispute with American researcher Robert Gallo over which of them discovered and isolated the HIV 'virus' and with *no evidence* found it to cause AIDS. You will see later that there is also no evidence that any 'virus' causes any disease or that there is even such a thing as a 'virus' in the way it is said to exist. The claim to have 'isolated' the HIV 'virus' will be presented in its real context as we come to the shocking story – and it is a story – of SARS-CoV-2 and so will Montagnier's assertion that he identified the full SARS-CoV-2 genome.

Hoax in the making

We can pick up the 'Covid' story in 2010 and the publication by the Rockefeller Foundation of a document called 'Scenarios for the Future of Technology and International Development'. The inner circle of the Rockefeller family has been serving the Cult since John D. Rockefeller (1839-1937) made his fortune with Standard Oil. It is less well known that the same Rockefeller – the Bill Gates of his day – was responsible for establishing what is now referred to as 'Big Pharma', the global network of pharmaceutical companies that make outrageous profits dispensing scalpel and drug 'medicine' and are obsessed with pumping vaccines in ever-increasing number into as many human arms and backsides as possible. John D. Rockefeller was the driving force behind the creation of the 'education' system in the United States and elsewhere specifically designed to program the perceptions of generations thereafter. The Rockefeller family donated exceptionally valuable land in New York for the United Nations building and were central in establishing the World Health Organization in 1948 as an agency of the UN which was created from the start as a Trojan horse and stalking horse for world government. Now enter Bill Gates. His family and the Rockefellers have long been extremely close and I have seen genealogy which claims that if you go back far enough the two families fuse into the same bloodline. Gates has said that the Bill and Melinda Gates Foundation was inspired by the Rockefeller Foundation and why not

when both are serving the same Cult? Major tax-exempt foundations are overwhelmingly criminal enterprises in which Cult assets fund the Cult agenda in the guise of 'philanthropy' while avoiding tax in the process. Cult operatives can become mega-rich in their role of front men and women for the psychopaths at the inner core and they, too, have to be psychopaths to knowingly serve such evil. Part of the deal is that a big percentage of the wealth gleaned from representing the Cult has to be spent advancing the ambitions of the Cult and hence you have the Rockefeller Foundation, Bill and Melinda Gates Foundation (and *so* many more) and people like George Soros with his global Open Society Foundations spending their billions in pursuit of global Cult control. Gates is a global public face of the Cult with his interventions in world affairs including Big Tech influence; a central role in the 'Covid' and 'vaccine' scam; promotion of the climate change shakedown; manipulation of education; geoengineering of the skies; and his food-control agenda as the biggest owner of farmland in America, his GMO promotion and through other means. As one writer said: 'Gates monopolizes or wields disproportionate influence over the tech industry, global health and vaccines, agriculture and food policy (including biopiracy and fake food), weather modification and other climate technologies, surveillance, education and media.' The almost limitless wealth secured through Microsoft and other not-allowed-to-fail ventures (including vaccines) has been ploughed into a long, long list of Cult projects designed to enslave the entire human race. Gates and the Rockefellers have been working as one unit with the Rockefeller-established World Health Organization leading global 'Covid' policy controlled by Gates through his mouth-piece Tedros. Gates became the WHO's biggest funder when Trump announced that the American government would cease its donations, but Biden immediately said he would restore the money when he took office in January, 2021. The Gates Foundation (the Cult) owns through limitless funding the world health system and the major players across the globe in the 'Covid' hoax.

Okay, with that background we return to that Rockefeller Foundation document of 2010 headed 'Scenarios for the Future of Technology and International Development' and its 'imaginary' epidemic of a virulent and deadly influenza strain which infected 20 percent of the global population and killed eight million in seven months. The Rockefeller scenario was that the epidemic destroyed economies, closed shops, offices and other businesses and led to governments imposing fierce rules and restrictions that included mandatory wearing of face masks and body-temperature checks to enter communal spaces like railway stations and supermarkets. The document predicted that even after the height of the Rockefeller-envisaged epidemic the authoritarian rule would continue to deal with further pandemics, transnational terrorism, environmental crises and rising poverty. Now you may think that the Rockefellers are our modern-day seers or alternatively, and rather more likely, that they well knew what was planned a few years further on. Fascism had to be imposed, you see, to 'protect citizens from risk and exposure'. The Rockefeller scenario document said:

During the pandemic, national leaders around the world flexed their authority and imposed airtight rules and restrictions, from the mandatory wearing of face masks to body-temperature checks at the entries to communal spaces like train stations and supermarkets. Even after the pandemic faded, this more authoritarian control and oversight of citizens and their activities stuck and even intensified. In order to protect themselves from the spread of increasingly global problems – from pandemics and transnational terrorism to environmental crises and rising poverty – leaders around the world took a firmer grip on power.

At first, the notion of a more controlled world gained wide acceptance and approval. Citizens willingly gave up some of their sovereignty – and their privacy – to more paternalistic states in exchange for greater safety and stability. Citizens were more tolerant, and even eager, for top-down direction and oversight, and national leaders had more latitude to impose order in the ways they saw fit.

In developed countries, this heightened oversight took many forms: biometric IDs for all citizens, for example, and tighter regulation of key industries whose stability was deemed vital to national interests. In many developed countries, enforced cooperation with a suite of new regulations and agreements slowly but steadily restored both order and, importantly, economic growth.

There we have the prophetic Rockefellers in 2010 and three years later came their paper for the Global Health Summit in Beijing, China, when government representatives, the private sector, international organisations and groups met to discuss the next 100 years of 'global health'. The Rockefeller Foundation-funded paper was called 'Dreaming the Future of Health for the Next 100 Years and more prophecy ensued as it described a dystopian future: 'The abundance of data, digitally tracking and linking people may mean the 'death of privacy' and may replace physical interaction with transient, virtual connection, generating isolation and raising questions of how values are shaped in virtual networks.' Next in the 'Covid' hoax preparation sequence came a 'table top' simulation in 2018 for another 'imaginary' pandemic of a disease called Clade X which was said to kill 900 million people. The exercise was organised by the Gates-funded Johns Hopkins University's Center for Health Security in the United States and this is the very same university that has been compiling the disgustingly and systematically erroneous global figures for 'Covid' cases and deaths. Similar Johns Hopkins health crisis scenarios have included the Dark Winter exercise in 2001 and Atlantic Storm in 2005.

Nostradamus 201

For sheer predictive genius look no further prophecy-watchers than the Bill Gates-funded Event 201 held only six weeks before the 'coronavirus pandemic' is supposed to have broken out in China and Event 201 was based on a scenario of a global 'coronavirus pandemic'. Melinda Gates, the great man's missus, told the BBC that he had 'prepared for years' for a coronavirus pandemic which told us what we already knew. Nostradamugates had predicted in a TED talk in 2015 that a pandemic was coming that would kill a lot of people and demolish the world economy. My god, the man is a machine – possibly even literally. Now here he was only weeks before the real thing funding just such a simulated scenario and involving his friends and associates at Johns Hopkins, the World Economic Forum Cult-front of Klaus Schwab, the United Nations,

Johnson & Johnson, major banks, and officials from China and the Centers for Disease Control in the United States. What synchronicity – Johns Hopkins would go on to compile the fraudulent 'Covid' figures, the World Economic Forum and Schwab would push the 'Great Reset' in response to 'Covid', the Centers for Disease Control would be at the forefront of 'Covid' policy in the United States, Johnson & Johnson would produce a 'Covid vaccine', and everything would officially start just weeks later in China. Spooky, eh? They were even accurate in creating a simulation of a 'virus' pandemic because the 'real thing' would also be a simulation. Event 201 was not an exercise preparing for something that might happen; it was a rehearsal for what those in control knew was *going* to happen and very shortly. Hours of this simulation were posted on the Internet and the various themes and responses mirrored what would soon be imposed to transform human society. News stories were inserted and what they said would be commonplace a few weeks later with still more prophecy perfection. Much discussion focused on the need to deal with misinformation and the 'anti-vax movement' which is exactly what happened when the 'virus' arrived – was said to have arrived – in the West.

Cult-owned social media banned criticism and exposure of the official 'virus' narrative and when I said there *was* no 'virus' in early April, 2020, I was banned by one platform after another including YouTube, Facebook and later Twitter. The mainstream broadcast media in Britain was in effect banned from interviewing me by the Tony-Blair-created government broadcasting censor Ofcom headed by career government bureaucrat Melanie Dawes who was appointed just as the 'virus' hoax was about to play out in January, 2020. At the same time the Ickonic media platform was using Vimeo, another ultra-Zionist-owned operation, while our own player was being created and they deleted in an instant hundreds of videos, documentaries, series and shows to confirm their unbelievable vindictiveness. We had copies, of course, and they had to be restored one by one when our player was ready. These people have no class. Sabbatian Facebook promised free advertisements for the Gates-

controlled World Health Organization narrative while deleting 'false claims and conspiracy theories' to stop 'misinformation' about the alleged coronavirus. All these responses could be seen just a short while earlier in the scenarios of Event 201. Extreme censorship was absolutely crucial for the Cult because the official story was so ridiculous and unsupportable by the evidence that it could never survive open debate and the free-flow of information and opinion. If you can't win a debate then don't have one is the Cult's approach throughout history. Facebook's little boy front man – front boy – Mark Zuckerberg equated 'credible and accurate information' with official sources and exposing their lies with 'misinformation'.

Silencing those that can see

The censorship dynamic of Event 201 is now the norm with an army of narrative-supporting 'fact-checker' organisations whose entire reason for being is to tell the public that official narratives are true and those exposing them are lying. One of the most appalling of these 'fact-checkers' is called NewsGuard founded by ultra-Zionist Americans Gordon Crovitz and Steven Brill. Crovitz is a former publisher of *The Wall Street Journal*, former Executive Vice President of Dow Jones, a member of the Council on Foreign Relations (CFR), and on the board of the American Association of Rhodes Scholars. The CFR and Rhodes Scholarships, named after Rothschild agent Cecil Rhodes who plundered the gold and diamonds of South Africa for his masters and the Cult, have featured widely in my books. NewsGuard don't seem to like me for some reason – I really can't think why – and they have done all they can to have me censored and discredited which is, to quote an old British politician, like being savaged by a dead sheep. They are, however, like all in the censorship network, very well connected and funded by organisations themselves funded by, or connected to, Bill Gates. As you would expect with anything associated with Gates NewsGuard has an offshoot called HealthGuard which 'fights online health care hoaxes'. How very kind. Somehow the NewsGuard European Managing Director Anna-Sophie Harling, a remarkably young-

looking woman with no broadcasting experience and little hands-on work in journalism, has somehow secured a position on the 'Content Board' of UK government broadcast censor Ofcom. An executive of an organisation seeking to discredit dissidents of the official narratives is making decisions for the government broadcast 'regulator' about content?? Another appalling 'fact-checker' is Full Fact funded by George Soros and global censors Google and Facebook.

It's amazing how many activists in the 'fact-checking', 'anti-hate', arena turn up in government-related positions – people like UK Labour Party activist Imran Ahmed who heads the Center for Countering Digital Hate founded by people like Morgan McSweeney, now chief of staff to the Labour Party's hapless and useless 'leader' Keir Starmer. Digital Hate – which is what it really is – uses the American spelling of Center to betray its connection to a transatlantic network of similar organisations which in 2020 shapeshifted from attacking people for 'hate' to attacking them for questioning the 'Covid' hoax and the dangers of the 'Covid vaccine'. It's just a coincidence, you understand. This is one of Imran Ahmed's hysterical statements: 'I would go beyond calling anti-vaxxers conspiracy theorists to say they are an extremist group that pose a national security risk.' No one could ever accuse this prat of understatement and he's including in that those parents who are now against vaccines after their children were damaged for life or killed by them. He's such a nice man. Ahmed does the rounds of the Woke media getting soft-ball questions from spineless 'journalists' who never ask what right he has to campaign to destroy the freedom of speech of others while he demands it for himself. There also seems to be an overrepresentation in Ofcom of people connected to the narrative-worshipping BBC. This incredible global network of narrative-support was super-vital when the 'Covid' hoax was played in the light of the mega-whopper lies that have to be defended from the spotlight cast by the most basic intelligence.

Setting the scene

The Cult plays the long game and proceeds step-by-step ensuring that everything is in place before major cards are played and they don't come any bigger than the 'Covid' hoax. The psychopaths can't handle events where the outcome isn't certain and as little as possible – preferably nothing – is left to chance. Politicians, government and medical officials who would follow direction were brought to illusory power in advance by the Cult web whether on the national stage or others like state governors and mayors of America. For decades the dynamic between officialdom, law enforcement and the public was changed from one of service to one of control and dictatorship. Behaviour manipulation networks established within government were waiting to impose the coming 'Covid' rules and regulations specifically designed to subdue and rewire the psyche of the people in the guise of protecting health. These included in the UK the Behavioural Insights Team part-owned by the British government Cabinet Office; the Scientific Pandemic Insights Group on Behaviours (SPI-B); and a whole web of intelligence and military groups seeking to direct the conversation on social media and control the narrative. Among them are the cyberwarfare (on the people) 77th Brigade of the British military which is also coordinated through the Cabinet Office as civilian and military leadership continues to combine in what they call the Fusion Doctrine. The 77th Brigade is a British equivalent of the infamous Israeli (Sabbatian) military cyberwarfare and Internet manipulation operation Unit 8200 which I expose at length in *The Trigger*. Also carefully in place were the medical and science advisers to government – many on the payroll past or present of Bill Gates – and a whole alternative structure of unelected government stood by to take control when elected parliaments were effectively closed down once the 'Covid' card was slammed on the table. The structure I have described here and so much more was installed in every major country through the Cult networks. The top-down control hierarchy looks like this: The Cult – Cult-owned Gates – the World Health Organization and Tedros – Gates-funded or controlled chief medical officers and science 'advisers' (dictators) in each country –

political 'leaders'– law enforcement – The People. Through this simple global communication and enforcement structure the policy of the Cult could be imposed on virtually the entire human population so long as they acquiesced to the fascism. With everything in place it was time for the button to be pressed in late 2019/early 2020.

These were the prime goals the Cult had to secure for its will to prevail:

1) Locking down economies, closing all but designated 'essential' businesses (Cult-owned corporations were 'essential'), and putting the population under house arrest was an imperative to destroy independent income and employment and ensure dependency on the Cult-controlled state in the Hunger Games Society. Lockdowns had to be established as the global blueprint from the start to respond to the 'virus' and followed by pretty much the entire world.

2) The global population had to be terrified into believing in a deadly 'virus' that didn't actually exist so they would unquestioningly obey authority in the belief that authority must know how best to protect them and their families. Software salesman Gates would suddenly morph into the world's health expert and be promoted as such by the Cult-owned media.

3) A method of testing that wasn't testing for the 'virus', but was only claimed to be, had to be in place to provide the illusion of 'cases' and subsequent 'deaths' that had a very different cause to the 'Covid-19' that would be scribbled on the death certificate.

4) Because there was no 'virus' and the great majority testing positive with a test not testing for the 'virus' would have no symptoms of anything the lie had to be sold that people without symptoms (without the 'virus') could still pass it on to others. This was crucial to justify for the first time quarantining – house arresting – healthy people. Without this the economy-destroying lockdown of *everybody* could not have been credibly sold.

5) The 'saviour' had to be seen as a vaccine which beyond evil drug companies were working like angels of mercy to develop as quickly as possible, with all corners cut, to save the day. The public must absolutely not know that the 'vaccine' had nothing to do with a 'virus' or that the contents were ready and waiting with a very different motive long before the 'Covid' card was even lifted from the pack.

I said in March, 2020, that the 'vaccine' would have been created way ahead of the 'Covid' hoax which justified its use and the following December an article in the New York *Intelligencer* magazine said the Moderna 'vaccine' had been 'designed' by

January, 2020. This was 'before China had even acknowledged that the disease could be transmitted from human to human, more than a week before the first confirmed coronavirus case in the United States'. The article said that by the time the first American death was announced a month later 'the vaccine had already been manufactured and shipped to the National Institutes of Health for the beginning of its Phase I clinical trial'. The 'vaccine' was actually 'designed' long before that although even with this timescale you would expect the article to ask how on earth it could have been done that quickly. Instead it asked why the 'vaccine' had not been rolled out then and not months later. Journalism in the mainstream is truly dead. I am going to detail in the next chapter why the 'virus' has never existed and how a hoax on that scale was possible, but first the foundation on which the Big Lie of 'Covid' was built.

The test that doesn't test

Fraudulent 'testing' is the bottom line of the whole 'Covid' hoax and was the means by which a 'virus' that did not exist *appeared* to exist. They could only achieve this magic trick by using a test not testing for the 'virus'. To use a test that *was* testing for the 'virus' would mean that every test would come back negative given there was no 'virus'. They chose to exploit something called the RT-PCR test invented by American biochemist Kary Mullis in the 1980s who said publicly that his PCR test … *cannot detect infectious disease*. Yes, the 'test' used worldwide to detect infectious 'Covid' to produce all the illusory 'cases' and 'deaths' compiled by Johns Hopkins and others *cannot detect infectious disease*. This fact came from the mouth of the man who invented PCR and was awarded the Nobel Prize in Chemistry in 1993 for doing so. Sadly, and incredibly conveniently for the Cult, Mullis died in August, 2019, at the age of 74 just before his test would be fraudulently used to unleash fascism on the world. He was said to have died from pneumonia which was an irony in itself. A few months later he would have had 'Covid-19' on his death certificate. I say the timing of his death was convenient because had he lived Mullis, a brilliant, honest and decent man, would have been

vociferously speaking out against the use of his test to detect 'Covid' when it was never designed, or able, to do that. I know that to be true given that Mullis made the same point when his test was used to 'detect' – not detect – HIV. He had been seriously critical of the Gallo/Montagnier claim to have isolated the HIV 'virus' and shown it to cause AIDS for which Mullis said there was no evidence. AIDS is actually not a disease but a series of diseases from which people die all the time. When they die from those *same diseases* after a positive 'test' for HIV then AIDS goes on their death certificate. I think I've heard that before somewhere. Countries instigated a policy with 'Covid' that anyone who tested positive with a test not testing for the 'virus' and died of any other cause within 28 days and even longer 'Covid-19' had to go on the death certificate. Cases have come from the test that can't test for infectious disease and the deaths are those who have died of *anything* after testing positive with a test not testing for the 'virus'. I'll have much more later about the death certificate scandal.

Mullis was deeply dismissive of the now US 'Covid' star Anthony Fauci who he said was a liar who didn't know anything about anything – 'and I would say that to his face – nothing.' He said of Fauci: 'The man thinks he can take a blood sample, put it in an electron microscope and if it's got a virus in there you'll know it – he doesn't understand electron microscopy and he doesn't understand medicine and shouldn't be in a position like he's in.' That position, terrifyingly, has made him the decider of 'Covid' fascism policy on behalf of the Cult in his role as director since 1984 of the National Institute of Allergy and Infectious Diseases (NIAID) while his record of being wrong is laughable; but being wrong, so long as it's the *right kind* of wrong, is why the Cult loves him. He'll say anything the Cult tells him to say. Fauci was made Chief Medical Adviser to the President immediately Biden took office. Biden was installed in the White House by Cult manipulation and one of his first decisions was to elevate Fauci to a position of even more control. This is a coincidence? Yes, and I identify as a flamenco dancer called Lola. How does such an incompetent criminal like Fauci remain in that

pivotal position in American health since *the 1980s*? When you serve the Cult it looks after you until you are surplus to requirements. Kary Mullis said prophetically of Fauci and his like: 'Those guys have an agenda and it's not an agenda we would like them to have … they make their own rules, they change them when they want to, and Tony Fauci does not mind going on television in front of the people who pay his salary and lie directly into the camera.' Fauci has done that almost daily since the 'Covid' hoax began. Lying is in Fauci's DNA. To make the situation crystal clear about the PCR test this is a direct quote from its inventor Kary Mullis:

> It [the PCR test] doesn't tell you that you're sick and doesn't tell you that the thing you ended up with was really going to hurt you ...'

Ask yourself why governments and medical systems the world over have been using this very test to decide who is 'infected' with the SARS-CoV-2 'virus' and the alleged disease it allegedly causes, 'Covid-19'. The answer to that question will tell you what has been going on. By the way, here's a little show-stopper – the 'new' SARS-CoV-2 'virus' was 'identified' as such right from the start using … *the PCR test not testing for the 'virus'*. If you are new to this and find that shocking then stick around. I have hardly started yet. Even worse, other 'tests', like the 'Lateral Flow Device' (LFD), are considered so useless that they have to be *confirmed* by the PCR test! Leaked emails written by Ben Dyson, adviser to UK 'Health' Secretary Matt Hancock, said they were 'dangerously unreliable'. Dyson, executive director of strategy at the Department of Health, wrote: 'As of today, someone who gets a positive LFD result in (say) London has at best a 25 per cent chance of it being a true positive, but if it is a self-reported test potentially as low as 10 per cent (on an optimistic assumption about specificity) or as low as 2 per cent (on a more pessimistic assumption).' These are the 'tests' that schoolchildren and the public are being urged to have twice a week or more and have to isolate if they get a positive. Each fake positive goes in the statistics as a 'case' no matter how ludicrously inaccurate and the

'cases' drive lockdown, masks and the pressure to 'vaccinate'. The government said in response to the email leak that the 'tests' were accurate which confirmed yet again what shocking bloody liars they are. The real false positive rate is *100 percent* as we'll see. In another 'you couldn't make it up' the UK government agreed to pay £2.8 billion to California's Innova Medical Group to supply the irrelevant lateral flow tests. The company's primary test-making centre is in China. Innova Medical Group, established in March, 2020, is owned by Pasaca Capital Inc, chaired by Chinese-American millionaire Charles Huang who was born in Wuhan.

How it works – and how it doesn't

The RT-PCR test, known by its full title of Polymerase chain reaction, is used across the world to make millions, even billions, of copies of a DNA/RNA genetic information sample. The process is called 'amplification' and means that a tiny sample of genetic material is amplified to bring out the detailed content. I stress that it is not testing for an infectious disease. It is simply amplifying a sample of genetic material. In the words of Kary Mullis: 'PCR is … just a process that's used to make a whole lot of something out of something.' To emphasise the point companies that make the PCR tests circulated around the world to 'test' for 'Covid' warn on the box that it can't be used to detect 'Covid' or infectious disease and is for research purposes only. It's okay, rest for a minute and you'll be fine. This is the test that produces the 'cases' and 'deaths' that have been used to destroy human society. All those global and national medical and scientific 'experts' demanding this destruction to 'save us' *KNOW* that the test is not testing for the 'virus' and the cases and deaths they claim to be real are an almost unimaginable fraud. Every one of them and so many others including politicians and psychopaths like Gates and Tedros must be brought before Nuremburg-type trials and jailed for the rest of their lives. The more the genetic sample is amplified by PCR the more elements of that material become sensitive to the test and by that I don't mean sensitive for a 'virus' but for elements of the genetic material which

is *naturally* in the body or relates to remnants of old conditions of various kinds lying dormant and causing no disease. Once the amplification of the PCR reaches a certain level *everyone* will test positive. So much of the material has been made sensitive to the test that everyone will have some part of it in their body. Even lying criminals like Fauci have said that once PCR amplifications pass 35 cycles everything will be a false positive that cannot be trusted for the reasons I have described. I say, like many proper doctors and scientists, that 100 percent of the 'positives' are false, but let's just go with Fauci for a moment.

He says that any amplification over 35 cycles will produce false positives and yet the US Centers for Disease Control (CDC) and Food and Drug Administration (FDA) have recommended up to *40 cycles* and the National Health Service (NHS) in Britain admitted in an internal document for staff that it was using *45 cycles* of amplification. A long list of other countries has been doing the same and at least one 'testing' laboratory has been using *50 cycles*. Have you ever heard a doctor, medical 'expert' or the media ask what level of amplification has been used to claim a 'positive'. The 'test' comes back 'positive' and so you have the 'virus', end of story. Now we can see how the government in Tanzania could send off samples from a goat and a pawpaw fruit under human names and both came back positive for 'Covid-19'. Tanzania president John Magufuli mocked the 'Covid' hysteria, the PCR test and masks and refused to import the DNA-manipulating 'vaccine'. The Cult hated him and an article sponsored by the Bill Gates Foundation appeared in the London *Guardian* in February, 2021, headed 'It's time for Africa to rein in Tanzania's anti-vaxxer president'. Well, 'reined in' he shortly was. Magufuli appeared in good health, but then, in March, 2021, he was dead at 61 from 'heart failure'. He was replaced by Samia Hassan Suhulu who is connected to Klaus Schwab's World Economic Forum and she immediately reversed Magufuli's 'Covid' policy. A sample of cola tested positive for 'Covid' with the PCR test in Germany while American actress and singer-songwriter Erykah Badu tested positive in one nostril and negative in the other. Footballer Ronaldo called

the PCR test 'bullshit' after testing positive three times and being forced to quarantine and miss matches when there was nothing wrong with him. The mantra from Tedros at the World Health Organization and national governments (same thing) has been test, test, test. They know that the more tests they can generate the more fake 'cases' they have which go on to become 'deaths' in ways I am coming to. The UK government has its Operation Moonshot planned to test multiple millions every day in workplaces and schools with free tests for everyone to use twice a week at home in line with the Cult plan from the start to make testing part of life. A government advertisement for an 'Interim Head of Asymptomatic Testing Communication' said the job included responsibility for delivering a 'communications strategy' (propaganda) 'to support the expansion of asymptomatic testing that *'normalises testing as part of everyday life*'. More tests means more fake 'cases', 'deaths' and fascism. I have heard of, and from, many people who booked a test, couldn't turn up, and yet got a positive result through the post for a test they'd never even had. The whole thing is crazy, but for the Cult there's method in the madness. Controlling and manipulating the level of amplification of the test means the authorities can control whenever they want the number of apparent 'cases' and 'deaths'. If they want to justify more fascist lockdown and destruction of livelihoods they keep the amplification high. If they want to give the illusion that lockdowns and the 'vaccine' are working then they lower the amplification and 'cases' and 'deaths' will appear to fall. In January, 2021, the Cult-owned World Health Organization suddenly warned laboratories about over-amplification of the test and to lower the threshold. Suddenly headlines began appearing such as: 'Why ARE "Covid" cases plummeting?' This was just when the vaccine rollout was underway and I had predicted months before they would make cases appear to fall through amplification tampering when the 'vaccine' came. These people are so predictable.

Cow vaccines?

The question must be asked of what is on the test swabs being poked far up the nose of the population to the base of the brain? A nasal swab punctured one woman's brain and caused it to leak fluid. Most of these procedures are being done by people with little training or medical knowledge. Dr Lorraine Day, former orthopaedic trauma surgeon and Chief of Orthopaedic Surgery at San Francisco General Hospital, says the tests are really a *'vaccine'*. Cows have long been vaccinated this way. She points out that masks have to cover the nose and the mouth where it is claimed the 'virus' exists in saliva. Why then don't they take saliva from the mouth as they do with a DNA test instead of pushing a long swab up the nose towards the brain? The ethmoid bone separates the nasal cavity from the brain and within that bone is the cribriform plate. Dr Day says that when the swab is pushed up against this plate and twisted the procedure is 'depositing things back there'. She claims that among these 'things' are nanoparticles that can enter the brain. Researchers have noted that a team at the Gates-funded Johns Hopkins have designed tiny, star-shaped micro-devices that can latch onto intestinal mucosa and release drugs into the body. Mucosa is the thin skin that covers the inside surface of parts of the body such as *the nose* and mouth and produces mucus to protect them. The Johns Hopkins micro-devices are called 'theragrippers' and were 'inspired' by a parasitic worm that digs its sharp teeth into a host's intestines. Nasal swabs are also coated in the sterilisation agent ethylene oxide. The US National Cancer Institute posts this explanation on its website:

> At room temperature, ethylene oxide is a flammable colorless gas with a sweet odor. It is used primarily to produce other chemicals, including antifreeze. In smaller amounts, ethylene oxide is used as a pesticide and a sterilizing agent. The ability of ethylene oxide to damage DNA makes it an effective sterilizing agent but also accounts for its cancer-causing activity.

The Institute mentions lymphoma and leukaemia as cancers most frequently reported to be associated with occupational exposure to ethylene oxide along with stomach and breast cancers. How does anyone think this is going to work out with the constant testing

regime being inflicted on adults and children at home and at school that will accumulate in the body anything that's on the swab?

Doctors know best

It is vital for people to realise that 'hero' doctors 'know' only what the Big Pharma-dominated medical authorities tell them to 'know' and if they refuse to 'know' what they are told to 'know' they are out the door. They are mostly not physicians or healers, but repeaters of the official narrative – or else. I have seen alleged professional doctors on British television make shocking statements that we are supposed to take seriously. One called 'Dr' Amir Khan, who is actually telling patients how to respond to illness, said that men could take the birth pill to 'help slow down the effects of Covid-19'. In March, 2021, another ridiculous 'Covid study' by an American doctor proposed injecting men with the female sex hormone progesterone as a 'Covid' treatment. British doctor Nighat Arif told the BBC that face coverings were now going to be part of ongoing normal. Yes, the vaccine protects you, she said (evidence?) … but the way to deal with viruses in the community was always going to come down to hand washing, face covering and keeping a physical distance. That's not what we were told before the 'vaccine' was circulating. Arif said she couldn't imagine ever again going on the underground or in a lift without a mask. I was just thanking my good luck that she was not my doctor when she said – in March, 2021 – that if 'we are *behaving* and we are doing all the right things' she thought we could 'have our nearest and dearest around us at home … around *Christmas* and N*ew Year!* Her patronising delivery was the usual school teacher talking to six-year-olds as she repeated every government talking point and probably believed them all. If we have learned anything from the 'Covid' experience surely it must be that humanity's perception of doctors needs a fundamental rethink. NHS 'doctor' Sara Kayat told her television audience that the 'Covid vaccine' would '100 percent prevent hospitalisation and death'. Not even Big Pharma claimed that. We have to stop taking 'experts' at their word without question when so many of them are

clueless and only repeating the party line on which their careers depend. That is not to say there are not brilliants doctors – there are and I have spoken to many of them since all this began – but you won't see them in the mainstream media or quoted by the psychopaths and yes-people in government.

Remember the name – Christian Drosten

German virologist Christian Drosten, Director of Charité Institute of Virology in Berlin, became a national star after the pandemic hoax began. He was feted on television and advised the German government on 'Covid' policy. Most importantly to the wider world Drosten led a group that produced the 'Covid' testing protocol for the PCR test. What a remarkable feat given the PCR cannot test for infectious disease and even more so when you think that Drosten said that his method of testing for SARS-CoV-2 was developed 'without having virus material available'. *He developed a test for a 'virus' that he didn't have and had never seen*. Let that sink in as you survey the global devastation that came from what he did. The whole catastrophe of Drosten's 'test' was based on the alleged genetic sequence published by Chinese scientists on the Internet. We will see in the next chapter that this alleged 'genetic sequence' has never been produced by China or anyone and cannot be when there *is no* SARS-CoV-2. Drosten, however, doesn't seem to let little details like that get in the way. He was the lead author with Victor Corman from the same Charité Hospital of the paper 'Detection of 2019 novel coronavirus (2019-nCoV) by real-time PCR' published in a magazine called *Eurosurveillance*. This became known as the Corman-Drosten paper. In November, 2020, with human society devastated by the effects of the Corman-Drosten test baloney, the protocol was publicly challenged by 22 international scientists and independent researchers from Europe, the United States, and Japan. Among them were senior molecular geneticists, biochemists, immunologists, and microbiologists. They produced a document headed 'External peer review of the RTPCR test to detect SARS-Cov-2 Reveals 10 Major Flaws At The Molecular and Methodological Level: Consequences

For False-Positive Results'. The flaws in the Corman-Drosten test included the following:

- The test is non-specific because of erroneous design
- Results are enormously variable
- The test is unable to discriminate between the whole 'virus' and viral fragments
- It doesn't have positive or negative controls
- The test lacks a standard operating procedure
- It is unsupported by proper peer view

The scientists said the PCR 'Covid' testing protocol was not founded on science and they demanded the Corman-Drosten paper be retracted by *Eurosurveillance*. They said all present and previous Covid deaths, cases, and 'infection rates' should be subject to a massive retroactive inquiry. Lockdowns and travel restrictions should be reviewed and relaxed and those diagnosed through PCR to have 'Covid-19' should not be forced to isolate. Dr Kevin Corbett, a health researcher and nurse educator with a long academic career producing a stream of peer-reviewed publications at many UK universities, made the same point about the PCR test debacle. He said of the scientists' conclusions: 'Every scientific rationale for the development of that test has been totally destroyed by this paper. It's like Hiroshima/Nagasaki to the Covid test.' He said that China hadn't given them an isolated 'virus' when Drosten developed the test. Instead they had developed the test from *a sequence in a gene bank*.' Put another way … *they made it up*! The scientists were supported in this contention by a Portuguese appeals court which ruled in November, 2020, that PCR tests are unreliable and it is unlawful to quarantine people based solely on a PCR test. The point about China not providing an isolated virus must be true when the 'virus' has never been isolated to this day and the consequences of that will become clear. Drosten and company produced this useless 'protocol' right on cue in January, 2020, just as the 'virus' was said to

be moving westward and it somehow managed to successfully pass a peer-review in 24 hours. In other words there was no peer-review for a test that would be used to decide who had 'Covid' and who didn't across the world. The Cult-created, Gates-controlled World Health Organization immediately recommended all its nearly 200 member countries to use the Drosten PCR protocol to detect 'cases' and 'deaths'. The sting was underway and it continues to this day.

So who is this Christian Drosten that produced the means through which death, destruction and economic catastrophe would be justified? His education background, including his doctoral thesis, would appear to be somewhat shrouded in mystery and his track record is dire as with another essential player in the 'Covid' hoax, the Gates-funded Professor Neil Ferguson at the Gates-funded Imperial College in London of whom more shortly. Drosten predicted in 2003 that the alleged original SARS 'virus' (SARS-1') was an epidemic that could have serious effects on economies and an effective vaccine would take at least two years to produce. Drosten's answer to every alleged 'outbreak' is a vaccine which you won't be shocked to know. What followed were just 774 official deaths worldwide and none in Germany where there were only nine cases. That is even if you believe there ever was a SARS 'virus' when the evidence is zilch and I will expand on this in the next chapter. Drosten claims to be co-discoverer of 'SARS-1' and developed a test for it in 2003. He was screaming warnings about 'swine flu' in 2009 and how it was a widespread infection far more severe than any dangers from a vaccine could be and people should get vaccinated. It would be helpful for Drosten's vocal chords if he simply recorded the words 'the virus is deadly and you need to get vaccinated' and copies could be handed out whenever the latest made-up threat comes along. Drosten's swine flu epidemic never happened, but Big Pharma didn't mind with governments spending hundreds of millions on vaccines that hardly anyone bothered to use and many who did wished they hadn't. A study in 2010 revealed that the risk of dying from swine flu, or H1N1, was no higher than that of the annual seasonal flu which is what at least most of 'it' really was as in

the case of 'Covid-19'. A media investigation into Drosten asked how with such a record of inaccuracy he could be *the* government adviser on these issues. The answer to that question is the same with Drosten, Ferguson and Fauci – they keep on giving the authorities the 'conclusions' and 'advice' they want to hear. Drosten certainly produced the goods for them in January, 2020, with his PCR protocol garbage and provided the foundation of what German internal medicine specialist Dr Claus Köhnlein, co-author of *Virus Mania*, called the 'test pandemic'. The 22 scientists in the *Eurosurveillance* challenge called out conflicts of interest within the Drosten 'protocol' group and with good reason. Olfert Landt, a regular co-author of Drosten 'studies', owns the biotech company TIB Molbiol Syntheselabor GmbH in Berlin which manufactures and sells the tests that Drosten and his mates come up with. They have done this with SARS, Enterotoxigenic E. coli (ETEC), MERS, Zika 'virus', yellow fever, and now 'Covid'. Landt told the *Berliner Zeitung* newspaper:

> The testing, design and development came from the Charité [Drosten and Corman]. We simply implemented it immediately in the form of a kit. And if we don't have the virus, which originally only existed in Wuhan, we can make a synthetic gene to simulate the genome of the virus. That's what we did very quickly.

This is more confirmation that the Drosten test was designed without access to the 'virus' and only a synthetic simulation which is what SARS-CoV-2 really is – a computer-generated synthetic fiction. It's quite an enterprise they have going here. A Drosten team decides what the test for something should be and Landt's biotech company flogs it to governments and medical systems across the world. His company must have made an absolute fortune since the 'Covid' hoax began. Dr Reiner Fuellmich, a prominent German consumer protection trial lawyer in Germany and California, is on Drosten's case and that of Tedros at the World Health Organization for crimes against humanity with a class-action lawsuit being prepared in the United States and other legal action in Germany.

Why China?

Scamming the world with a 'virus' that doesn't exist would seem impossible on the face of it, but not if you have control of the relatively few people that make policy decisions and the great majority of the global media. Remember it's not about changing 'real' reality it's about controlling *perception* of reality. You don't have to make something happen you only have make people *believe* that it's happening. Renegade Minds understand this and are therefore much harder to swindle. 'Covid-19' is not a 'real' 'virus'. It's a mind virus, like a computer virus, which has infected the minds, not the bodies, of billions. It all started, publically at least, in China and that alone is of central significance. The Cult was behind the revolution led by its asset Mao Zedong, or Chairman Mao, which established the People's Republic of China on October 1st, 1949. It should have been called The Cult's Republic of China, but the name had to reflect the recurring illusion that vicious dictatorships are run by and for the people (see all the 'Democratic Republics' controlled by tyrants). In the same way we have the 'Biden' Democratic Republic of America officially ruled by a puppet tyrant (at least temporarily) on behalf of Cult tyrants. The creation of Mao's merciless communist/fascist dictatorship was part of a frenzy of activity by the Cult at the conclusion of World War Two which, like the First World War, it had instigated through its assets in Germany, Britain, France, the United States and elsewhere. Israel was formed in 1948; the Soviet Union expanded its 'Iron Curtain' control, influence and military power with the Warsaw Pact communist alliance in 1955; the United Nations was formed in 1945 as a Cult precursor to world government; and a long list of world bodies would be established including the World Health Organization (1948), World Trade Organization (1948 under another name until 1995), International Monetary Fund (1945) and World Bank (1944). Human society was redrawn and hugely centralised in the global Problem-Reaction-Solution that was World War Two. All these changes were significant. Israel would become the headquarters of the Sabbatians

and the revolution in China would prepare the ground and control system for the events of 2019/2020.

Renegade Minds know there are no borders except for public consumption. The Cult is a seamless, borderless global entity and to understand the game we need to put aside labels like borders, nations, countries, communism, fascism and democracy. These delude the population into believing that countries are ruled within their borders by a government of whatever shade when these are mere agencies of a global power. America's illusion of democracy and China's communism/fascism are subsidiaries – vehicles – for the same agenda. We may hear about conflict and competition between America and China and on the lower levels that will be true; but at the Cult level they are branches of the same company in the way of the McDonald's example I gave earlier. I have tracked in the books over the years support by US governments of both parties for Chinese Communist Party infiltration of American society through allowing the sale of land, even military facilities, and the acquisition of American business and university influence. All this is underpinned by the infamous stealing of intellectual property and technological know-how. Cult-owned Silicon Valley corporations waive their fraudulent 'morality' to do business with human-rights-free China; Cult-controlled Disney has become China's PR department; and China in effect owns 'American' sports such as basketball which depends for much of its income on Chinese audiences. As a result any sports player, coach or official speaking out against China's horrific human rights record is immediately condemned or fired by the China-worshipping National Basketball Association. One of the first acts of China-controlled Biden was to issue an executive order telling federal agencies to stop making references to the 'virus' by the 'geographic location of its origin'. Long-time Congressman Jerry Nadler warned that criticising China, America's biggest rival, leads to hate crimes against Asian people in the United States. So shut up you bigot. China is fast closing in on Israel as a country that must not be criticised which is apt, really, given that Sabbatians control them both. The two countries have

developed close economic, military, technological and strategic ties which include involvement in China's 'Silk Road' transport and economic initiative to connect China with Europe. Israel was the first country in the Middle East to recognise the establishment of Mao's tyranny in 1950 months after it was established.

Project Wuhan – the 'Covid' Psyop

I emphasise again that the Cult plays the long game and what is happening to the world today is the result of centuries of calculated manipulation following a script to take control step-by-step of every aspect of human society. I will discuss later the common force behind all this that has spanned those centuries and thousands of years if the truth be told. Instigating the Mao revolution in China in 1949 with a 2020 'pandemic' in mind is not only how they work – the 71 years between them is really quite short by the Cult's standards of manipulation preparation. The reason for the Cult's Chinese revolution was to create a fiercely-controlled environment within which an extreme structure for human control could be incubated to eventually be unleashed across the world. We have seen this happen since the 'pandemic' emerged from China with the Chinese control-structure founded on AI technology and tyrannical enforcement sweep across the West. Until the moment when the Cult went for broke in the West and put its fascism on public display Western governments had to pay some lip-service to freedom and democracy to not alert too many people to the tyranny-in-the-making. Freedoms were more subtly eroded and power centralised with covert government structures put in place waiting for the arrival of 2020 when that smokescreen of 'freedom' could be dispensed with. The West was not able to move towards tyranny before 2020 anything like as fast as China which was created as a tyranny and had no limits on how fast it could construct the Cult's blueprint for global control. When the time came to impose that structure on the world it was the same Cult-owned Chinese communist/fascist government that provided the excuse – the 'Covid pandemic'. It was absolutely crucial to the Cult plan for the Chinese response to the 'pandemic' –

draconian lockdowns of the entire population – to become the blueprint that Western countries would follow to destroy the livelihoods and freedom of their people. This is why the Cult-owned, Gates-owned, WHO Director-General Tedros said early on:

The Chinese government is to be congratulated for the extraordinary measures it has taken to contain the outbreak. China is actually setting a new standard for outbreak response and it is not an exaggeration.

Forbes magazine said of China: '… those measures protected untold millions from getting the disease'. The Rockefeller Foundation 'epidemic scenario' document in 2010 said 'prophetically':

However, a few countries did fare better – China in particular. The Chinese government's quick imposition and enforcement of mandatory quarantine for all citizens, as well as its instant and near-hermetic sealing off of all borders, saved millions of lives, stopping the spread of the virus far earlier than in other countries and enabling a swifter post-pandemic recovery.

Once again – *spooky*.

The first official story was the 'bat theory' or rather the bat diversion. The source of the 'virus outbreak' we were told was a ''wet market' in Wuhan where bats and other animals are bought and eaten in horrifically unhygienic conditions. Then another story emerged through the alternative media that the 'virus' had been released on purpose or by accident from a BSL-4 (biosafety level 4) laboratory in Wuhan not far from the wet market. The lab was reported to create and work with lethal concoctions and bioweapons. Biosafety level 4 is the highest in the World Health Organization system of safety and containment. Renegade Minds are aware of what I call designer manipulation. The ideal for the Cult is for people to buy its prime narrative which in the opening salvoes of the 'pandemic' was the wet market story. It knows, however, that there is now a considerable worldwide alternative media of researchers sceptical of anything governments say and they are often given a version of events in a form they can perceive as credible while misdirecting them from the real truth. In this case let them

think that the conspiracy involved is a 'bioweapon virus' released from the Wuhan lab to keep them from the real conspiracy – *there is no 'virus'*. The WHO's current position on the source of the outbreak at the time of writing appears to be: 'We haven't got a clue, mate.' This is a good position to maintain mystery and bewilderment. The inner circle will know where the 'virus' came from – *nowhere*. The bottom line was to ensure the public believed there *was* a 'virus' and it didn't much matter if they thought it was natural or had been released from a lab. The belief that there was a 'deadly virus' was all that was needed to trigger global panic and fear. The population was terrified into handing their power to authority and doing what they were told. They had to or they were 'all gonna die'.

In March, 2020, information began to come my way from real doctors and scientists and my own additional research which had my intuition screaming: 'Yes, that's it! *There is no virus*.' The 'bioweapon' was not the 'virus'; it was the *'vaccine'* already being talked about that would be the bioweapon. My conclusion was further enhanced by happenings in Wuhan. The 'virus' was said to be sweeping the city and news footage circulated of people collapsing in the street (which they've never done in the West with the same 'virus'). The Chinese government was building 'new hospitals' in a matter of ten days to 'cope with demand' such was the virulent nature of the 'virus'. Yet in what seemed like no time the 'new hospitals' closed – even if they even opened – and China declared itself 'virus-free'. It was back to business as usual. This was more propaganda to promote the Chinese draconian lockdowns in the West as the way to 'beat the virus'. Trouble was that we subsequently had lockdown after lockdown, but never business as usual. As the people of the West and most of the rest of the world were caught in an ever-worsening spiral of lockdown, social distancing, masks, isolated old people, families forced apart, and livelihood destruction, it was party-time in Wuhan. Pictures emerged of thousands of people enjoying pool parties and concerts. It made no sense until you realised there never was a 'virus' and the

whole thing was a Cult set-up to transform human society out of one its major global strongholds – China.

How is it possible to deceive virtually the entire world population into believing there is a deadly virus when there is not even a 'virus' let alone a deadly one? It's nothing like as difficult as you would think and that's clearly true because it happened.

Postscript: See end of book Postscript for more on the 'Wuhan lab virus release' story which the authorities and media were pushing heavily in the summer of 2021 to divert attention from the truth that the 'Covid virus' is pure invention.

CHAPTER FIVE

There *is no* 'virus'

You can fool some of the people all of the time, and all of the people some of the time, but you cannot fool all of the people all of the time
Abraham Lincoln

The greatest form of mind control is repetition. The more you repeat the same mantra of alleged 'facts' the more will accept them to be true. It becomes an 'everyone knows that, mate'. If you can also censor any other version or alternative to your alleged 'facts' you are pretty much home and cooking.

By the start of 2020 the Cult owned the global mainstream media almost in its entirety to spew out its 'Covid' propaganda and ignore or discredit any other information and view. Cult-owned social media platforms in Cult-owned Silicon Valley were poised and ready to unleash a campaign of ferocious censorship to obliterate all but the official narrative. To complete the circle many demands for censorship by Silicon Valley were led by the mainstream media as 'journalists' became full-out enforcers for the Cult both as propagandists and censors. Part of this has been the influx of young people straight out of university who have become 'journalists' in significant positions. They have no experience and a headful of programmed perceptions from their years at school and university at a time when today's young are the most perceptually-targeted generations in known human history given the insidious impact of technology. They enter the media perceptually prepared and ready to repeat the narratives of the system that programmed them to

repeat its narratives. The BBC has a truly pathetic 'specialist disinformation reporter' called Marianna Spring who fits this bill perfectly. She is clueless about the world, how it works and what is really going on. Her role is to discredit anyone doing the job that a proper journalist would do and system-serving hacks like Spring wouldn't dare to do or even see the need to do. They are too busy licking the arse of authority which can never be wrong and, in the case of the BBC propaganda programme, *Panorama*, contacting payments systems such as PayPal to have a donations page taken down for a film company making documentaries questioning vaccines. Even the BBC soap opera *EastEnders* included a disgracefully biased scene in which an inarticulate white working class woman was made to look foolish for questioning the 'vaccine' while a well-spoken black man and Asian woman promoted the government narrative. It ticked every BBC box and the fact that the black and minority community was resisting the 'vaccine' had nothing to do with the way the scene was written. The BBC has become a disgusting tyrannical propaganda and censorship operation that should be defunded and disbanded and a free media take its place with a brief to stop censorship instead of demanding it. A BBC 'interview' with Gates goes something like: 'Mr Gates, sir, if I can call you sir, would you like to tell our audience why you are such a great man, a wonderful humanitarian philanthropist, and why you should absolutely be allowed as a software salesman to decide health policy for approaching eight billion people? Thank you, sir, please sir.' Propaganda programming has been incessant and merciless and when all you hear is the same story from the media, repeated by those around you who have only heard the same story, is it any wonder that people on a grand scale believe absolute mendacious garbage to be true? You are about to see, too, why this level of information control is necessary when the official 'Covid' narrative is so nonsensical and unsupportable by the evidence.

Structure of Deceit

The pyramid structure through which the 'Covid' hoax has been manifested is very simple and has to be to work. As few people as possible have to be involved with full knowledge of what they are doing – and why – or the real story would get out. At the top of the pyramid are the inner core of the Cult which controls Bill Gates who, in turn, controls the World Health Organization through his pivotal funding and his puppet Director-General mouthpiece, Tedros. Before he was appointed Tedros was chair of the Gates-founded Global Fund to 'fight against AIDS, tuberculosis and malaria', a board member of the Gates-funded 'vaccine alliance' GAVI, and on the board of another Gates-funded organisation. Gates owns him and picked him for a specific reason – Tedros is a crook and worse. 'Dr' Tedros (he's not a medical doctor, the first WHO chief not to be) was a member of the tyrannical Marxist government of Ethiopia for decades with all its human rights abuses. He has faced allegations of corruption and misappropriation of funds and was exposed three times for covering up cholera epidemics while Ethiopia's health minister. Tedros appointed the mass-murdering genocidal Zimbabwe dictator Robert Mugabe as a WHO goodwill ambassador for public health which, as with Tedros, is like appointing a psychopath to run a peace and love campaign. The move was so ridiculous that he had to drop Mugabe in the face of widespread condemnation. American economist David Steinman, a Nobel peace prize nominee, lodged a complaint with the International Criminal Court in The Hague over alleged genocide by Tedros when he was Ethiopia's foreign minister. Steinman says Tedros was a 'crucial decision maker' who directed the actions of Ethiopia's security forces from 2013 to 2015 and one of three officials in charge when those security services embarked on the 'killing' and 'torturing' of Ethiopians. You can see where Tedros is coming from and it's sobering to think that he has been the vehicle for Gates and the Cult to direct the global response to 'Covid'. Think about that. A psychopathic Cult dictates to psychopath Gates who dictates to psychopath Tedros who dictates how countries of the world must respond to a 'Covid virus' never scientifically shown to exist. At the same time psychopathic Cult-owned Silicon Valley information

giants like Google, YouTube, Facebook and Twitter announced very early on that they would give the Cult/Gates/Tedros/WHO version of the narrative free advertising and censor those who challenged their intelligence-insulting, mendacious story.

The next layer in the global 'medical' structure below the Cult, Gates and Tedros are the chief medical officers and science 'advisers' in each of the WHO member countries which means virtually all of them. Medical officers and arbiters of science (they're not) then take the WHO policy and recommended responses and impose them on their country's population while the political 'leaders' say they are deciding policy (they're clearly not) by 'following the science' on the advice of the 'experts' – the same medical officers and science 'advisers' (dictators). In this way with the rarest of exceptions the entire world followed the same policy of lockdown, people distancing, masks and 'vaccines' dictated by the psychopathic Cult, psychopathic Gates and psychopathic Tedros who we are supposed to believe give a damn about the health of the world population they are seeking to enslave. That, amazingly, is all there is to it in terms of crucial decision-making. Medical staff in each country then follow like sheep the dictates of the shepherds at the top of the national medical hierarchies – chief medical officers and science 'advisers' who themselves follow like sheep the shepherds of the World Health Organization and the Cult. Shepherds at the national level often have major funding and other connections to Gates and his Bill and Melinda Gates Foundation which carefully hands out money like confetti at a wedding to control the entire global medical system from the WHO down.

Follow the money

Christopher Whitty, Chief Medical Adviser to the UK Government at the centre of 'virus' policy, a senior adviser to the government's Scientific Advisory Group for Emergencies (SAGE), and Executive Board member of the World Health Organization, was gifted a grant of $40 million by the Bill and Melinda Gates Foundation for malaria research in Africa. The BBC described the unelected Whitty as 'the

official who will probably have the greatest impact on our everyday lives of any individual policymaker in modern times' and so it turned out. What Gates and Tedros have said Whitty has done like his equivalents around the world. Patrick Vallance, co-chair of SAGE and the government's Chief Scientific Adviser, is a former executive of Big Pharma giant GlaxoSmithKline with its fundamental financial and business connections to Bill Gates. In September, 2020, it was revealed that Vallance owned a deferred bonus of shares in GlaxoSmithKline worth £600,000 while the company was 'developing' a 'Covid vaccine'. Move along now – nothing to see here – what could possibly be wrong with that? Imperial College in London, a major player in 'Covid' policy in Britain and elsewhere with its 'Covid-19' Response Team, is funded by Gates and has big connections to China while the now infamous Professor Neil Ferguson, the useless 'computer modeller' at Imperial College is also funded by Gates. Ferguson delivered the dramatically inaccurate excuse for the first lockdowns (much more in the next chapter). The Institute for Health Metrics and Evaluation (IHME) in the United States, another source of outrageously false 'Covid' computer models to justify lockdowns, is bankrolled by Gates who is a vehement promotor of lockdowns. America's version of Whitty and Vallance, the again now infamous Anthony Fauci, has connections to 'Covid vaccine' maker Moderna as does Bill Gates through funding from the Bill and Melinda Gates Foundation. Fauci is director of the National Institute of Allergy and Infectious Diseases (NIAID), a major recipient of Gates money, and they are very close. Deborah Birx who was appointed White House Coronavirus Response Coordinator in February, 2020, is yet another with ties to Gates. Everywhere you look at the different elements around the world behind the coordination and decision making of the 'Covid' hoax there is Bill Gates and his money. They include the World Health Organization; Centers for Disease Control (CDC) in the United States; National Institutes of Health (NIH) of Anthony Fauci; Imperial College and Neil Ferguson; the London School of Hygiene where Chris Whitty worked; Regulatory agencies like the UK Medicines & Healthcare products Regulatory Agency (MHRA)

which gave emergency approval for 'Covid vaccines'; Wellcome Trust; GAVI, the Vaccine Alliance; the Coalition for Epidemic Preparedness Innovations (CEPI); Johns Hopkins University which has compiled the false 'Covid' figures; and the World Economic Forum. A Nationalfile.com article said:

> Gates has a lot of pull in the medical world, he has a multi-million dollar relationship with Dr. Fauci, and Fauci originally took the Gates line supporting vaccines and casting doubt on [the drug hydroxychloroquine]. Coronavirus response team member Dr. Deborah Birx, appointed by former president Obama to serve as United States Global AIDS Coordinator, also sits on the board of a group that has received billions from Gates' foundation, and Birx reportedly used a disputed Bill Gates-funded model for the White House's Coronavirus effort. Gates is a big proponent for a population lockdown scenario for the Coronavirus outbreak.

Another funder of Moderna is the Defense Advanced Research Projects Agency (DARPA), the technology-development arm of the Pentagon and one of the most sinister organisations on earth. DARPA had a major role with the CIA covert technology-funding operation In-Q-Tel in the development of Google and social media which is now at the centre of global censorship. Fauci and Gates are extremely close and openly admit to talking regularly about 'Covid' policy, but then why wouldn't Gates have a seat at every national 'Covid' table after his Foundation committed $1.75 billion to the 'fight against Covid-19'. When passed through our Orwellian Translation Unit this means that he has bought and paid for the Cult-driven 'Covid' response worldwide. Research the major 'Covid' response personnel in your own country and you will find the same Gates funding and other connections again and again. Medical and science chiefs following World Health Organization 'policy' sit atop a medical hierarchy in their country of administrators, doctors and nursing staff. These 'subordinates' are told they must work and behave in accordance with the policy delivered from the 'top' of the national 'health' pyramid which is largely the policy delivered by the WHO which is the policy delivered by Gates and the Cult. The whole 'Covid' narrative has been imposed on medical staff by a climate of fear although great numbers don't even need that to comply. They do so through breathtaking levels of ignorance and

include doctors who go through life simply repeating what Big Pharma and their hierarchical masters tell them to say and believe. No wonder Big Pharma 'medicine' is one of the biggest killers on Planet Earth.

The same top-down system of intimidation operates with regard to the Cult Big Pharma cartel which also dictates policy through national and global medical systems in this way. The Cult and Big Pharma agendas are the same because the former controls and owns the latter. 'Health' administrators, doctors, and nursing staff are told to support and parrot the dictated policy or they will face consequences which can include being fired. How sad it's been to see medical staff meekly repeating and imposing Cult policy without question and most of those who can see through the deceit are only willing to speak anonymously off the record. They know what will happen if their identity is known. This has left the courageous few to expose the lies about the 'virus', face masks, overwhelmed hospitals that aren't, and the dangers of the 'vaccine' that isn't a vaccine. When these medical professionals and scientists, some renowned in their field, have taken to the Internet to expose the truth their articles, comments and videos have been deleted by Cult-owned Facebook, Twitter and YouTube. What a real head-shaker to see YouTube videos with leading world scientists and highly qualified medical specialists with an added link underneath to the notorious Cult propaganda website *Wikipedia* to find the 'facts' about the same subject.

HIV – the 'Covid' trial-run

I'll give you an example of the consequences for health and truth that come from censorship and unquestioning belief in official narratives. The story was told by PCR inventor Kary Mullis in his book *Dancing Naked in the Mind Field*. He said that in 1984 he accepted as just another scientific fact that Luc Montagnier of France's Pasteur Institute and Robert Gallo of America's National Institutes of Health had independently discovered that a 'retrovirus' dubbed HIV (human immunodeficiency virus) caused AIDS. They

were, after all, Mullis writes, specialists in retroviruses. This is how the medical and science pyramids work. Something is announced or *assumed* and then becomes an everybody-knows-that purely through repetition of the assumption as if it is fact. Complete crap becomes accepted truth with no supporting evidence and only repetition of the crap. This is how a 'virus' that doesn't exist became the 'virus' that changed the world. The HIV-AIDS fairy story became a multi-billion pound industry and the media poured out propaganda terrifying the world about the deadly HIV 'virus' that caused the lethal AIDS. By then Mullis was working at a lab in Santa Monica, California, to detect retroviruses with his PCR test in blood donations received by the Red Cross. In doing so he asked a virologist where he could find a reference for HIV being the cause of AIDS. 'You don't need a reference,' the virologist said … *'Everybody knows it.'* Mullis said he wanted to quote a reference in the report he was doing and he said he felt a little funny about not knowing the source of such an important discovery when everyone else seemed to. The virologist suggested he cite a report by the Centers for Disease Control and Prevention (CDC) on morbidity and mortality. Mullis read the report, but it only said that an organism had been identified and did not say how. The report did not identify the original scientific work. Physicians, however, *assumed* (key recurring theme) that if the CDC was convinced that HIV caused AIDS then proof must exist. Mullis continues:

I did computer searches. Neither Montagnier, Gallo, nor anyone else had published papers describing experiments which led to the conclusion that HIV probably caused AIDS. I read the papers in Science for which they had become well known as AIDS doctors, but all they had said there was that they had found evidence of a past infection by something which was probably HIV in some AIDS patients.

They found antibodies. Antibodies to viruses had always been considered evidence of past disease, not present disease. Antibodies signaled that the virus had been defeated. The patient had saved himself. There was no indication in these papers that this virus caused a disease. They didn't show that everybody with the antibodies had the disease. In fact they found some healthy people with antibodies.

Mullis asked why their work had been published if Montagnier and Gallo hadn't really found this evidence, and why had they been fighting so hard to get credit for the discovery? He says he was hesitant to write 'HIV is the probable cause of AIDS' until he found published evidence to support that. 'Tens of thousands of scientists and researchers were spending billions of dollars a year doing research based on this idea,' Mullis writes. 'The reason had to be there somewhere; otherwise these people would not have allowed their research to settle into one narrow channel of investigation.' He said he lectured about PCR at numerous meetings where people were always talking about HIV and he asked them how they knew that HIV was the cause of AIDS:

> Everyone said something. Everyone had the answer at home, in the office, in some drawer. They all knew, and they would send me the papers as soon as they got back. But I never got any papers. Nobody ever sent me the news about how AIDS was caused by HIV.

Eventually Mullis was able to ask Montagnier himself about the reference proof when he lectured in San Diego at the grand opening of the University of California AIDS Research Center. Mullis says this was the last time he would ask his question without showing anger. Montagnier said he should reference the CDC report. 'I read it', Mullis said, and it didn't answer the question. 'If Montagnier didn't know the answer who the hell did?' Then one night Mullis was driving when an interview came on National Public Radio with Peter Duesberg, a prominent virologist at Berkeley and a California Scientist of the Year. Mullis says he finally understood why he could not find references that connected HIV to AIDS – *there weren't any!* No one had ever proved that HIV causes AIDS even though it had spawned a multi-billion pound global industry and the media was repeating this as fact every day in their articles and broadcasts terrifying the shit out of people about AIDS and giving the impression that a positive test for HIV (see 'Covid') was a death sentence. Duesberg was a threat to the AIDS gravy train and the agenda that underpinned it. He was therefore abused and castigated after he told the Proceedings of the National Academy of Sciences

there was no good evidence implicating the new 'virus'. Editors rejected his manuscripts and his research funds were deleted. Mullis points out that the CDC has defined AIDS as one of more than 30 diseases *if accompanied* by a positive result on a test that detects antibodies to HIV; but those same diseases are not defined as AIDS cases when antibodies are not detected:

> If an HIV-positive woman develops uterine cancer, for example, she is considered to have AIDS. If she is not HIV positive, she simply has uterine cancer. An HIV-positive man with tuberculosis has AIDS; if he tests negative he simply has tuberculosis. If he lives in Kenya or Colombia, where the test for HIV antibodies is too expensive, he is simply presumed to have the antibodies and therefore AIDS, and therefore he can be treated in the World Health Organization's clinic. It's the only medical help available in some places. And it's free, because the countries that support WHO are worried about AIDS.

Mullis accuses the CDC of continually adding new diseases (see ever more 'Covid symptoms') to the grand AIDS definition and of virtually doctoring the books to make it appear as if the disease continued to spread. He cites how in 1993 the CDC enormously broadened its AIDS definition and county health authorities were delighted because they received $2,500 per year from the Federal government for every reported AIDS case. Ladies and gentlemen, I have just described, via Kary Mullis, the 'Covid pandemic' of 2020 and beyond. Every element is the same and it's been pulled off in the same way by the same networks.

The 'Covid virus' exists? Okay – prove it. Er … still waiting

What Kary Mullis described with regard to 'HIV' has been repeated with 'Covid'. A claim is made that a new, or 'novel', infection has been found and the entire medical system of the world repeats that as fact exactly as they did with HIV and AIDS. No one in the mainstream asks rather relevant questions such as 'How do you know?' and 'Where is your proof?' The SARS-Cov-2 'virus' and the 'Covid-19 disease' became an overnight 'everybody-knows-that'. The origin could be debated and mulled over, but what you could not suggest was that 'SARS-Cov-2' didn't exist. That would be

ridiculous. 'Everybody knows' the 'virus' exists. Well, I didn't for one along with American proper doctors like Andrew Kaufman and Tom Cowan and long-time American proper journalist Jon Rappaport. We dared to pursue the obvious and simple question: 'Where's the evidence?' The overwhelming majority in medicine, journalism and the general public did not think to ask that. After all, *everyone knew* there was a new 'virus'. Everyone was saying so and I heard it on the BBC. Some would eventually argue that the 'deadly virus' was nothing like as deadly as claimed, but few would venture into the realms of its very existence. Had they done so they would have found that the evidence for that claim had gone AWOL as with HIV causes AIDS. In fact, not even that. For something to go AWOL it has to exist in the first place and scientific proof for a 'SARS-Cov-2' can be filed under nothing, nowhere and zilch.

Dr Andrew Kaufman is a board-certified forensic psychiatrist in New York State, a Doctor of Medicine and former Assistant Professor and Medical Director of Psychiatry at SUNY Upstate Medical University, and Medical Instructor of Hematology and Oncology at the Medical School of South Carolina. He also studied biology at the Massachusetts Institute of Technology (MIT) and trained in Psychiatry at Duke University. Kaufman is retired from allopathic medicine, but remains a consultant and educator on natural healing, I saw a video of his very early on in the 'Covid' hoax in which he questioned claims about the 'virus' in the absence of any supporting evidence and with plenty pointing the other way. I did everything I could to circulate his work which I felt was asking the pivotal questions that needed an answer. I can recommend an excellent pull-together interview he did with the website The Last Vagabond entitled *Dr Andrew Kaufman: Virus Isolation, Terrain Theory and Covid-19* and his website is andrewkaufmanmd.com. Kaufman is not only a forensic psychiatrist; he is forensic in all that he does. He always reads original scientific papers, experiments and studies instead of second-third-fourth-hand reports about the 'virus' in the media which are repeating the repeated repetition of the narrative. When he did so with the original Chinese 'virus' papers Kaufman

realised that there was no evidence of a 'SARS-Cov-2'. They had never – from the start – shown it to exist and every repeat of this claim worldwide was based on the accepted existence of proof that was nowhere to be found – see Kary Mullis and HIV. Here we go again.

Let's postulate

Kaufman discovered that the Chinese authorities immediately concluded that the cause of an illness that broke out among about 200 initial patients in Wuhan was a 'new virus' when there were no grounds to make that conclusion. The alleged 'virus' was not isolated from other genetic material in their samples and then shown through a system known as Koch's postulates to be the causative agent of the illness. The world was told that the SARS-Cov-2 'virus' caused a disease they called 'Covid-19' which had 'flu-like' symptoms and could lead to respiratory problems and pneumonia. If it wasn't so tragic it would almost be funny. *'Flu-like' symptoms'? Pneumonia? Respiratory disease?* What in *CHINA* and particularly in *Wuhan*, one of the most polluted cities in the world with a resulting epidemic of respiratory disease?? Three hundred thousand people get pneumonia in China every year and there are nearly a billion cases worldwide of 'flu-like symptoms'. These have a whole range of causes – including pollution in Wuhan – but no other possibility was credibly considered in late 2019 when the world was told there was a new and deadly 'virus'. The global prevalence of pneumonia and 'flu-like systems' gave the Cult networks unlimited potential to re-diagnose these other causes as the mythical 'Covid-19' and that is what they did from the very start. Kaufman revealed how Chinese medical and science authorities (all subordinates to the Cult-owned communist government) took genetic material from the lungs of only a few of the first patients. The material contained their own cells, bacteria, fungi and other microorganisms living in their bodies. The only way you could prove the existence of the 'virus' and its responsibility for the alleged 'Covid-19' was to isolate the virus from all the other material – a process also known as 'purification' – and

then follow the postulates sequence developed in the late 19th century by German physician and bacteriologist Robert Koch which became the 'gold standard' for connecting an alleged causation agent to a disease:

1. The microorganism (bacteria, fungus, virus, etc.) must be present in every case of the disease and all patients must have the same symptoms. It must also *not be present in healthy individuals*.

2. The microorganism must be isolated from the host with the disease. If the microorganism is a bacteria or fungus it must be grown in a pure culture. If it is a virus, it must be purified (i.e. containing no other material except the virus particles) from a clinical sample.

3. The specific disease, with all of its characteristics, must be reproduced when the infectious agent (the purified virus or a pure culture of bacteria or fungi) is inoculated into a healthy, susceptible host.

4. The microorganism must be recoverable from the experimentally infected host as in step 2.

Not one of these criteria has been met in the case of 'SARS-Cov-2' and 'Covid-19'. Not ONE. *EVER*. Robert Koch refers to bacteria and not viruses. What are called 'viral particles' are so minute (hence masks are useless by any definition) that they could only be seen after the invention of the electron microscope in the 1930s and can still only be observed through that means. American bacteriologist and virologist Thomas Milton Rivers, the so-called 'Father of Modern Virology' who was very significantly director of the Rockefeller Institute for Medical Research in the 1930s, developed a less stringent version of Koch's postulates to identify 'virus' causation known as 'Rivers criteria'. 'Covid' did not pass that process either. Some even doubt whether any 'virus' can be isolated from other particles containing genetic material in the Koch method. Freedom of Information requests in many countries asking for scientific proof that the 'Covid virus' has been purified and isolated and shown to exist have all come back with a 'we don't have that' and when this happened with a request to the UK Department of Health they added this comment:

However, outside of the scope of the [Freedom of Information Act] and on a discretionary basis, the following information has been advised to us, which may be of interest. Most infectious diseases are caused by viruses, bacteria or fungi. Some bacteria or fungi have the capacity to grow on their own in isolation, for example in colonies on a petri dish. Viruses are different in that they are what we call 'obligate pathogens' – that is, they cannot survive or reproduce without infecting a host ...

… For some diseases, it is possible to establish causation between a microorganism and a disease by isolating the pathogen from a patient, growing it in pure culture and reintroducing it to a healthy organism. These are known as 'Koch's postulates' and were developed in 1882. However, as our understanding of disease and different disease-causing agents has advanced, these are no longer the method for determining causation [Andrew Kaufman asks why in that case are there two published articles falsely claiming to satisfy Koch's postulates].

It has long been known that viral diseases cannot be identified in this way as viruses cannot be grown in 'pure culture'. When a patient is tested for a viral illness, this is normally done by looking for the presence of antigens, or viral genetic code in a host with molecular biology techniques [Kaufman asks how you could know the origin of these chemicals without having a pure culture for comparison].

For the record 'antigens' are defined so:

Invading microorganisms have antigens on their surface that the human body can recognise as being foreign – meaning not belonging to it. When the body recognises a foreign antigen, lymphocytes (white blood cells) produce antibodies, which are complementary in shape to the antigen.

Notwithstanding that this is open to question in relation to 'SARS-Cov-2' the presence of 'antibodies' can have many causes and they are found in people that are perfectly well. Kary Mullis said: 'Antibodies … had always been considered evidence of past disease, not present disease.'

'Covid' really is a *computer* 'virus'

Where the UK Department of Health statement says 'viruses' are now 'diagnosed' through a 'viral genetic code in a host with molecular biology techniques', they mean … *the PCR test* which its inventor said cannot test for infectious disease. They have no credible method of connecting a 'virus' to a disease and we will see that there is no scientific proof that any 'virus' causes any disease or there is any such thing as a 'virus' in the way that it is described. Tenacious Canadian researcher Christine Massey and her team made

some 40 Freedom of Information requests to national public health agencies in different countries asking for proof that SARS-CoV-2 has been isolated and not one of them could supply that information. Massey said of her request in Canada: 'Freedom of Information reveals Public Health Agency of Canada has no record of 'SARS-COV-2' isolation performed by anyone, anywhere, ever.' If you accept the comment from the UK Department of Health it's because they can't isolate a 'virus'. Even so many 'science' papers claimed to have isolated the 'Covid virus' until they were questioned and had to admit they hadn't. A reply from the Robert Koch Institute in Germany was typical: 'I am not aware of a paper which purified isolated SARS-CoV-2.' So what the hell was Christian Drosten and his gang using to design the 'Covid' testing protocol that has produced all the illusory Covid' cases and 'Covid' deaths when the head of the Chinese version of the CDC admitted there was a problem right from the start in that the 'virus' had never been isolated/purified? Breathe deeply: What they are calling 'Covid' is actually created by a *computer program* i.e. *they made it up* – er, that's it. They took lung fluid, with many sources of genetic material, from one single person alleged to be infected with Covid-19 by a PCR test which they *claimed*, without clear evidence, contained a 'virus'. They used several computer programs to create a model of a theoretical virus genome sequence from more than fifty-six million small sequences of RNA, each of an unknown source, assembling them like a puzzle with no known solution. The computer filled in the gaps with sequences from bits in the gene bank to make it look like a bat SARS-like coronavirus! A wave of the magic wand and poof, an in silico (computer-generated) genome, a scientific fantasy, was created. UK health researcher Dr Kevin Corbett made the same point with this analogy:

> … It's like giving you a few bones and saying that's your fish. It could be any fish. Not even a skeleton. Here's a few fragments of bones. That's your fish … It's all from gene bank and the bits of the virus sequence that weren't there they made up.
>
> They synthetically created them to fill in the blanks. That's what genetics is; it's a code. So it's ABBBCCDDD and you're missing some what you think is EEE so you put it in. It's all

synthetic. You just manufacture the bits that are missing. This is the end result of the geneticization of virology. This is basically a computer virus.

Further confirmation came in an email exchange between British citizen journalist Frances Leader and the government's Medicines & Healthcare Products Regulatory Agency (the Gates-funded MHRA) which gave emergency permission for untested 'Covid vaccines' to be used. The agency admitted that the 'vaccine' is not based on an isolated 'virus', but comes from a *computer-generated model*. Frances Leader was naturally banned from Cult-owned fascist Twitter for making this exchange public. The process of creating computer-generated alleged 'viruses' is called 'in silico' or 'in silicon' – computer chips – and the term 'in silico' is believed to originate with biological experiments using only a computer in 1989. 'Vaccines' involved with 'Covid' are also produced 'in silico' or by computer not a natural process. If the original 'virus' is nothing more than a made-up computer model how can there be 'new variants' of something that never existed in the first place? They are not new 'variants'; they are new *computer models* only minutely different to the original program and designed to further terrify the population into having the 'vaccine' and submitting to fascism. You want a 'new variant'? Click, click, enter – there you go. Tell the medical profession that you have discovered a 'South African variant', 'UK variants' or a 'Brazilian variant' and in the usual HIV-causes-AIDS manner they will unquestioningly repeat it with no evidence whatsoever to support these claims. They will go on television and warn about the dangers of 'new variants' while doing nothing more than repeating what they have been told to be true and knowing that any deviation from that would be career suicide. Big-time insiders will know it's a hoax, but much of the medical community is clueless about the way they are being played and themselves play the public without even being aware they are doing so. What an interesting 'coincidence' that AstraZeneca and Oxford University were conducting 'Covid vaccine trials' in the three countries – the UK, South Africa and Brazil – where the first three 'variants' were claimed to have 'broken out'.

Here's your 'virus' – it's a unicorn

Dr Andrew Kaufman presented a brilliant analysis describing how the 'virus' was imagined into fake existence when he dissected an article published by *Nature* and written by 19 authors detailing *alleged* 'sequencing of a complete viral genome' of the 'new SARS-CoV-2 virus'. This computer-modelled *in silico* genome was used as a template for all subsequent genome sequencing experiments that resulted in the so-called variants which he said now number more than *6,000*. The fake genome was constructed from more than 56 million individual short strands of RNA. Those little pieces were assembled into longer pieces by finding areas of overlapping sequences. The computer programs created over two million possible combinations from which the authors simply chose the longest one. They then compared this to a 'bat virus' and the computer 'alignment' rearranged the sequence and filled in the gaps! They called this computer-generated abomination the 'complete genome'. Dr Tom Cowan, a fellow medical author and collaborator with Kaufman, said such computer-generation constitutes scientific fraud and he makes this superb analogy:

> Here is an equivalency: A group of researchers claim to have found a unicorn because they found a piece of a hoof, a hair from a tail, and a snippet of a horn. They then add that information into a computer and program it to re-create the unicorn, and they then claim this computer re-creation is the real unicorn. Of course, they had never actually seen a unicorn so could not possibly have examined its genetic makeup to compare their samples with the actual unicorn's hair, hooves and horn.
>
> The researchers claim they decided which is the real genome of SARS-CoV-2 by 'consensus', sort of like a vote. Again, different computer programs will come up with different versions of the imaginary 'unicorn', so they come together as a group and decide which is the real imaginary unicorn.

This is how the 'virus' that has transformed the world was brought into fraudulent 'existence'. Extraordinary, yes, but as the Nazis said the bigger the lie the more will believe it. Cowan, however, wasn't finished and he went on to identify what he called the real blockbuster in the paper. He quotes this section from a paper written

by virologists and published by the CDC and then explains what it means:

Therefore, we examined the capacity of SARS-CoV-2 to infect and replicate in several common primate and human cell lines, including human adenocarcinoma cells (A549), human liver cells (HUH 7.0), and human embryonic kidney cells (HEK-293T). In addition to Vero E6 and Vero CCL81 cells. ... Each cell line was inoculated at high multiplicity of infection and examined 24h post-infection.

No CPE was observed in any of the cell lines except in Vero cells, which grew to greater than 10 to the 7th power at 24 h post-infection. In contrast, HUH 7.0 and 293T showed only modest viral replication, and A549 cells were incompatible with SARS CoV-2 infection.

Cowan explains that when virologists attempt to prove infection they have three possible 'hosts' or models on which they can test. The first was humans. Exposure to humans was generally not done for ethical reasons and has never been done with SARS-CoV-2 or any coronavirus. The second possible host was animals. Cowan said that forgetting for a moment that they never actually use purified virus when exposing animals they do use solutions that they *claim* contain the virus. Exposure to animals has been done with SARS-CoV-2 in an experiment involving mice and this is what they found: *None of the wild (normal) mice got sick*. In a group of genetically-modified mice, a statistically insignificant number lost weight and had slightly bristled fur, but they experienced nothing like the illness called 'Covid-19'. Cowan said the third method – the one they mostly rely on – is to inoculate solutions they *say* contain the virus onto a variety of tissue cultures. This process had never been shown to kill tissue *unless* the sample material was starved of nutrients and poisoned as *part of the process*. Yes, incredibly, in tissue experiments designed to show the 'virus' is responsible for killing the tissue they starve the tissue of nutrients and add toxic drugs including antibiotics and they do not have control studies to see if it's the starvation and poisoning that is degrading the tissue rather than the 'virus' they allege to be in there somewhere. You want me to pinch you? Yep, I understand. Tom Cowan said this about the whole nonsensical farce as he explains what that quote from the CDC paper really means:

The shocking thing about the above quote is that using their own methods, the virologists found that solutions containing SARS-CoV-2 – even in high amounts – were NOT, I repeat NOT, infective to any of the three human tissue cultures they tested. In plain English, this means they proved, on their terms, that this 'new coronavirus' is not infectious to human beings. It is ONLY infective to monkey kidney cells, and only then when you add two potent drugs (gentamicin and amphotericin), known to be toxic to kidneys, to the mix.

My friends, read this again and again. These virologists, published by the CDC, performed a clear proof, on their terms, showing that the SARS-CoV-2 virus is harmless to human beings. That is the only possible conclusion, but, unfortunately, this result is not even mentioned in their conclusion. They simply say they can provide virus stocks cultured only on monkey Vero cells, thanks for coming.

Cowan concluded: 'If people really understood how this "science" was done, I would hope they would storm the gates and demand honesty, transparency and truth.' Dr Michael Yeadon, former Vice President and Chief Scientific Adviser at drug giant Pfizer has been a vocal critic of the 'Covid vaccine' and its potential for multiple harm. He said in an interview in April, 2021, that 'not one [vaccine] has the virus. He was asked why vaccines normally using a 'dead' version of a disease to activate the immune system were not used for 'Covid' and instead we had the synthetic methods of the 'mRNA Covid vaccine'. Yeadon said that to do the former 'you'd have to have some of [the virus] wouldn't you?' He added: 'No-one's got any – seriously.' Yeadon said that surely they couldn't have fooled the whole world for a year without having a virus, 'but oddly enough ask around – no one's got it'. He didn't know why with all the 'great labs' around the world that the virus had not been isolated – 'Maybe they've been too busy running bad PCR tests and vaccines that people don't need.' What is today called 'science' is not 'science' at all. Science is no longer what is, but whatever people can be manipulated to *believe* that it is. Real science has been hijacked by the Cult to dispense and produce the 'expert scientists' and contentions that suit the agenda of the Cult. How big-time this has happened with the 'Covid' hoax which is entirely based on fake science delivered by fake 'scientists' and fake 'doctors'. The human-caused climate change hoax is also entirely based on fake science delivered by fake 'scientists' and fake 'climate experts'. In both cases real

scientists, climate experts and doctors have their views suppressed and deleted by the Cult-owned science establishment, media and Silicon Valley. This is the 'science' that politicians claim to be 'following' and a common denominator of 'Covid' and climate are Cult psychopaths Bill Gates and his mate Klaus Schwab at the Gates-funded World Economic Forum. But, don't worry, it's all just a coincidence and absolutely nothing to worry about. *Zzzzzzzz*.

What is a 'virus' REALLY?

Dr Tom Cowan is one of many contesting the very existence of viruses let alone that they cause disease. This is understandable when there is no scientific evidence for a disease-causing 'virus'. German virologist Dr Stefan Lanka won a landmark case in 2017 in the German Supreme Court over his contention that there is no such thing as a measles virus. He had offered a big prize for anyone who could prove there is and Lanka won his case when someone sought to claim the money. There is currently a prize of more than 225,000 euros on offer from an Isolate Truth Fund for anyone who can prove the isolation of SARS-CoV-2 and its genetic substance. Lanka wrote in an article headed 'The Misconception Called Virus' that scientists think a 'virus' is causing tissue to become diseased and degraded when in fact it is the *processes they are using* which do that – not a 'virus'. Lanka has done an important job in making this point clear as Cowan did in his analysis of the CDC paper. Lanka says that all claims about viruses as disease-causing pathogens are wrong and based on 'easily recognisable, understandable and verifiable misinterpretations.' Scientists believed they were working with 'viruses' in their laboratories when they were really working with 'typical particles of specific dying tissues or cells …' Lanka said that the tissue decaying process claimed to be caused by a 'virus' still happens when no alleged 'virus' is involved. It's the *process* that does the damage and not a 'virus'. The genetic sample is deprived of nutrients, removed from its energy supply through removal from the body and then doused in toxic antibiotics to remove any bacteria. He confirms again that establishment scientists do not (pinch me)

conduct control experiments to see if this is the case and if they did they would see the claims that 'viruses' are doing the damage is nonsense. He adds that during the measles 'virus' court case he commissioned an independent laboratory to perform just such a control experiment and the result was that the tissues and cells died in the exact same way as with alleged 'infected' material. This is supported by a gathering number of scientists, doctors and researchers who reject what is called 'germ theory' or the belief in the body being infected by contagious sources emitted by other people. Researchers Dawn Lester and David Parker take the same stance in their highly-detailed and sourced book *What Really Makes You Ill – Why everything you thought you knew about disease is wrong* which was recommended to me by a number of medical professionals genuinely seeking the truth. Lester and Parker say there is no provable scientific evidence to show that a 'virus' can be transmitted between people or people and animals or animals and people:

> The definition also claims that viruses are the cause of many diseases, as if this has been definitively proven. But this is not the case; there is no original scientific evidence that definitively demonstrates that any virus is the cause of any disease. The burden of proof for any theory lies with those who proposed it; but none of the existing documents provides 'proof' that supports the claim that 'viruses' are pathogens.

Dr Tom Cowan employs one of his clever analogies to describe the process by which a 'virus' is named as the culprit for a disease when what is called a 'virus' is only material released by cells detoxing themselves from infiltration by chemical or radiation poisoning. The tidal wave of technologically-generated radiation in the 'smart' modern world plus all the toxic food and drink are causing this to happen more than ever. Deluded 'scientists' misread this as a gathering impact of what they wrongly label 'viruses'.

Paper can infect houses

Cowan said in an article for davidicke.com – with his tongue only mildly in his cheek – that he believed he had made a tremendous

discovery that may revolutionise science. He had discovered that small bits of paper are alive, 'well alive-ish', can 'infect' houses, and then reproduce themselves inside the house. The result was that this explosion of growth in the paper inside the house causes the house to explode, blowing it to smithereens. His evidence for this new theory is that in the past months he had carefully examined many of the houses in his neighbourhood and found almost no scraps of paper on the lawns and surrounds of the house. There was an occasional stray label, but nothing more. Then he would return to these same houses a week or so later and with a few, not all of them, particularly the old and decrepit ones, he found to his shock and surprise they were littered with stray bits of paper. He knew then that the paper had infected these houses, made copies of itself, and blew up the house. A young boy on a bicycle at one of the sites told him he had seen a demolition crew using dynamite to explode the house the previous week, but Cowan dismissed this as the idle thoughts of silly boys because 'I was on to something big'. He was on to how 'scientists' mistake genetic material in the detoxifying process for something they call a 'virus'. Cowan said of his house and paper story:

> If this sounds crazy to you, it's because it should. This scenario is obviously nuts. But consider this admittedly embellished, for effect, current viral theory that all scientists, medical doctors and virologists currently believe.

He takes the example of the 'novel SARS-Cov2' virus to prove the point. First they take someone with an undefined illness called 'Covid-19' and don't even attempt to find any virus in their sputum. Never mind the scientists still describe how this 'virus', which they have not located attaches to a cell receptor, injects its genetic material, in 'Covid's' case, RNA, into the cell. The RNA once inserted exploits the cell to reproduce itself and makes 'thousands, nay millions, of copies of itself … Then it emerges victorious to claim its next victim':

If you were to look in the scientific literature for proof, actual scientific proof, that uniform SARS-CoV2 viruses have been properly isolated from the sputum of a sick person, that actual spike proteins could be seen protruding from the virus (which has not been found), you would find that such evidence doesn't exist.

If you go looking in the published scientific literature for actual pictures, proof, that these spike proteins or any viral proteins are ever attached to any receptor embedded in any cell membrane, you would also find that no such evidence exists. If you were to look for a video or documented evidence of the intact virus injecting its genetic material into the body of the cell, reproducing itself and then emerging victorious by budding off the cell membrane, you would find that no such evidence exists.

The closest thing you would find is electron micrograph pictures of cellular particles, possibly attached to cell debris, both of which to be seen were stained by heavy metals, a process that completely distorts their architecture within the living organism. This is like finding bits of paper stuck to the blown-up bricks, thereby proving the paper emerged by taking pieces of the bricks on its way out.

The Enders baloney

Cowan describes the 'Covid' story as being just as make-believe as his paper story and he charts back this fantasy to a Nobel Prize winner called John Enders (1897-1985), an American biomedical scientist who has been dubbed 'The Father of Modern Vaccines'. Enders is claimed to have 'discovered' the process of the viral culture which 'proved' that a 'virus' caused measles. Cowan explains how Enders did this 'by using the EXACT same procedure that has been followed by every virologist to find and characterize every new virus since 1954'. Enders took throat swabs from children with measles and immersed them in 2ml of milk. Penicillin (100u/ml) and the antibiotic streptomycin (50,g/ml) were added and the whole mix was centrifuged – rotated at high speed to separate large cellular debris from small particles and molecules as with milk and cream, for example. Cowan says that if the aim is to find little particles of genetic material ('viruses') in the snot from children with measles it would seem that the last thing you would do is mix the snot with other material – milk –that also has genetic material. 'How are you ever going to know whether whatever you found came from the snot or the milk?' He points out that streptomycin is a 'nephrotoxic' or poisonous-to-the-kidney drug. You will see the relevance of that

shortly. Cowan says that it gets worse, much worse, when Enders describes the culture medium upon which the virus 'grows': 'The culture medium consisted of bovine amniotic fluid (90%), beef embryo extract (5%), horse serum (5%), antibiotics and phenol red as an indicator of cell metabolism.' Cowan asks incredulously: 'Did he just say that the culture medium also contained fluids and tissues that are themselves rich sources of genetic material?' The genetic cocktail, or 'medium', is inoculated onto tissue and cells from rhesus monkey *kidney* tissue. This is where the importance of streptomycin comes in and currently-used antimicrobials and other drugs that are *poisonous to kidneys* and used in ALL modern viral cultures (e.g. gentamicin, streptomycin, and amphotericin). Cowan asks: 'How are you ever going to know from this witch's brew where any genetic material comes from as we now have five different sources of rich genetic material in our mix?' Remember, he says, that all genetic material, whether from monkey kidney tissues, bovine serum, milk, etc., is made from the exact same components. The same central question returns: 'How are you possibly going to know that it was the virus that killed the kidney tissue and not the toxic antibiotic and starvation rations on which you are growing the tissue?' John Enders answered the question himself – *you can't*:

A second agent was obtained from an uninoculated culture of monkey kidney cells. The cytopathic changes [death of the cells] it induced in the unstained preparations could not be distinguished with confidence from the viruses isolated from measles.

The death of the cells ('cytopathic changes') happened in exactly the same manner, whether they inoculated the kidney tissue with the measles snot or not, Cowan says. 'This is evidence that the destruction of the tissue, the very proof of viral causation of illness, was not caused by anything in the snot because they saw the same destructive effect when the snot was not even used … the cytopathic, i.e., cell-killing, changes come from the process of the culture itself, not from any virus in any snot, period.' Enders quotes in his 1957 paper a virologist called Ruckle as reporting similar findings 'and in addition has isolated an agent from monkey kidney tissue that is so

far indistinguishable from human measles virus'. In other words, Cowan says, these particles called 'measles viruses' are simply and clearly breakdown products of the starved and poisoned tissue. For measles 'virus' see all 'viruses' including the so-called 'Covid virus'. Enders, the 'Father of Modern Vaccines', also said:

There is a potential risk in employing cultures of primate cells for the production of vaccines composed of attenuated virus, since the presence of other agents possibly latent in primate tissues cannot be definitely excluded by any known method.

Cowan further quotes from a paper published in the journal *Viruses* in May, 2020, while the 'Covid pandemic' was well underway in the media if not in reality. 'EVs' here refers to particles of genetic debris from our own tissues, such as exosomes of which more in a moment: 'The remarkable resemblance between EVs and viruses has caused quite a few problems in the studies focused on the analysis of EVs released during viral infections.' Later the paper adds that to date a reliable method that can actually guarantee a complete separation (of EVs from viruses) DOES NOT EXIST. This was published at a time when a fairy tale 'virus' was claimed in total certainty to be causing a fairy tale 'viral disease' called 'Covid-19' – a fairy tale that was already well on the way to transforming human society in the image that the Cult has worked to achieve for so long. Cowan concludes his article:

To summarize, there is no scientific evidence that pathogenic viruses exist. What we think of as 'viruses' are simply the normal breakdown products of dead and dying tissues and cells. When we are well, we make fewer of these particles; when we are starved, poisoned, suffocated by wearing masks, or afraid, we make more.

There is no engineered virus circulating and making people sick. People in laboratories all over the world are making genetically modified products to make people sick. These are called vaccines. There is no virome, no 'ecosystem' of viruses, viruses are not 8%, 50% or 100 % of our genetic material. These are all simply erroneous ideas based on the misconception called a virus.

What is 'Covid'? Load of bollocks

The background described here by Cowan and Lanka was emphasised in the first video presentation that I saw by Dr Andrew Kaufman when he asked whether the 'Covid virus' was in truth a natural defence mechanism of the body called 'exosomes'. These are released by cells when in states of toxicity – see the same themes returning over and over. They are released ever more profusely as chemical and radiation toxicity increases and think of the potential effect therefore of 5G alone as its destructive frequencies infest the human energetic information field with a gathering pace (5G went online in Wuhan in 2019 as the 'virus' emerged). I'll have more about this later. Exosomes transmit a warning to the rest of the body that 'Houston, we have a problem'. Kaufman presented images of exosomes and compared them with 'Covid' under an electron microscope and the similarity was remarkable. They both attach to the same cell receptors (*claimed* in the case of 'Covid'), contain the same genetic material in the form of RNA or ribonucleic acid, and both are found in 'viral cell cultures' with damaged or dying cells. James Hildreth MD, President and Chief Executive Officer of the Meharry Medical College at Johns Hopkins, said: 'The virus is fully an exosome in every sense of the word.' Kaufman's conclusion was that there is no 'virus': 'This entire pandemic is a completely manufactured crisis … there is no evidence of anyone dying from [this] illness.' Dr Tom Cowan and Sally Fallon Morell, authors of *The Contagion Myth*, published a statement with Dr Kaufman in February, 2021, explaining why the 'virus' does not exist and you can read it that in full in the Appendix.

'Virus' theory can be traced to the 'cell theory' in 1858 of German physician Rudolf Virchow (1821-1920) who contended that disease originates from a single cell infiltrated by a 'virus'. Dr Stefan Lanka said that findings and insights with respect to the structure, function and central importance of tissues in the creation of life, which were already known in 1858, comprehensively refute the cell theory. Virchow ignored them. We have seen the part later played by John Enders in the 1950s and Lanka notes that infection theories were only established as a global dogma through the policies and

eugenics of the Third Reich in Nazi Germany (creation of the same Sabbatian cult behind the 'Covid' hoax). Lanka said: 'Before 1933, scientists dared to contradict this theory; after 1933, these critical scientists were silenced'. Dr Tom Cowan's view is that ill-heath is caused by too much of something, too little of something, or toxification from chemicals and radiation – not contagion. We must also highlight as a major source of the 'virus' theology a man still called the 'Father of Modern Virology' – Thomas Milton Rivers (1888-1962). There is no way given the Cult's long game policy that it was a coincidence for the 'Father of Modern Virology' to be director of the Rockefeller Institute for Medical Research from 1937 to 1956 when he is credited with making the Rockefeller Institute a leader in 'viral research'. Cult Rockefellers were the force behind the creation of Big Pharma 'medicine', established the World Health Organisation in 1948, and have long and close associations with the Gates family that now runs the WHO during the pandemic hoax through mega-rich Cult gofer and psychopath Bill Gates.

Only a Renegade Mind can see through all this bullshit by asking the questions that need to be answered, not taking 'no' or prevarication for an answer, and certainly not hiding from the truth in fear of speaking it. Renegade Minds have always changed the world for the better and they will change this one no matter how bleak it may currently appear to be.

CHAPTER SIX

Sequence of deceit

If you tell the truth, you don't have to remember anything
Mark Twain

Against the background that I have laid out this far the sequence that took us from an invented 'virus' in Cult-owned China in late 2019 to the fascist transformation of human society can be seen and understood in a whole new context.

We were told that a deadly disease had broken out in Wuhan and the world media began its campaign (coordinated by behavioural psychologists as we shall see) to terrify the population into unquestioning compliance. We were shown images of Chinese people collapsing in the street which never happened in the West with what was supposed to be the same condition. In the earliest days when alleged cases and deaths were few the fear register was hysterical in many areas of the media and this would expand into the common media narrative across the world. The real story was rather different, but we were never told that. The Chinese government, one of the Cult's biggest centres of global operation, said they had discovered a new illness with flu-like and pneumonia-type symptoms in a city with such toxic air that it is overwhelmed with flu-like symptoms, pneumonia and respiratory disease. Chinese scientists said it was a new – 'novel' – coronavirus which they called Sars-Cov-2 and that it caused a disease they labelled 'Covid-19'. There was no evidence for this and the 'virus' has never to this day been isolated, purified and its genetic code established from that. It

was from the beginning a computer-generated fiction. Stories of Chinese whistleblowers saying the number of deaths was being supressed or that the 'new disease' was related to the Wuhan bio-lab misdirected mainstream and alternative media into cul-de-sacs to obscure the real truth – there was no 'virus'.

Chinese scientists took genetic material from the lung fluid of just a few people and said they had found a 'new' disease when this material had a wide range of content. There was no evidence for a 'virus' for the very reasons explained in the last two chapters. The 'virus' has never been shown to (a) exist and (b) cause any disease. People were diagnosed on symptoms that are so widespread in Wuhan and polluted China and with a PCR test that can't detect infectious disease. On this farce the whole global scam was sold to the rest of the world which would also diagnose respiratory disease as 'Covid-19' from symptoms alone or with a PCR test not testing for a 'virus'. Flu miraculously disappeared *worldwide* in 2020 and into 2021 as it was redesignated 'Covid-19'. It was really the same old flu with its 'flu-like' symptoms attributed to 'flu-like' 'Covid-19'. At the same time with very few exceptions the Chinese response of draconian lockdown and fascism was the chosen weapon to respond across the West as recommended by the Cult-owned Tedros at the Cult-owned World Health Organization run by the Cult-owned Gates. All was going according to plan. Chinese scientists – everything in China is controlled by the Cult-owned government – compared their contaminated RNA lung-fluid material with other RNA sequences and said it appeared to be just under 80 percent identical to the SARS-CoV-1 'virus' claimed to be the cause of the SARS (severe acute respiratory syndrome) 'outbreak' in 2003. They decreed that because of this the 'new virus' had to be related and they called it SARS-CoV-2. There are some serious problems with this assumption and *assumption* was all it was. Most 'factual' science turns out to be assumptions repeated into everyone-knows-that. A match of under 80-percent is meaningless. Dr Kaufman makes the point that there's a *96 percent* genetic correlation between humans and chimpanzees, but 'no one would say our genetic material is part

of the chimpanzee family'. Yet the Chinese authorities were claiming that a much lower percentage, less than 80 percent, proved the existence of a new 'coronavirus'. For goodness sake human DNA is 60 percent similar to a *banana*.

You are feeling sleepy

The entire 'Covid' hoax is a global Psyop, a psychological operation to program the human mind into believing and fearing a complete fantasy. A crucial aspect of this was what *appeared* to happen in Italy. It was all very well streaming out daily images of an alleged catastrophe in Wuhan, but to the Western mind it was still on the other side of the world in a very different culture and setting. A reaction of 'this could happen to me and my family' was still nothing like as intense enough for the mind-doctors. The Cult needed a Western example to push people over that edge and it chose Italy, one of its major global locations going back to the Roman Empire. An Italian 'Covid' crisis was manufactured in a particular area called Lombardy which just happens to be notorious for its toxic air and therefore respiratory disease. Wuhan, China, déjà vu. An hysterical media told horror stories of Italians dying from 'Covid' in their droves and how Lombardy hospitals were being overrun by a tidal wave of desperately ill people needing treatment after being struck down by the 'deadly virus'. Here was the psychological turning point the Cult had planned. Wow, if this is happening in Italy, the Western mind concluded, this indeed could happen to me and my family. Another point is that Italian authorities responded by following the Chinese blueprint so vehemently recommended by the Cult-owned World Health Organization. They imposed fascistic lockdowns on the whole country viciously policed with the help of surveillance drones sweeping through the streets seeking out anyone who escaped from mass house arrest. Livelihoods were destroyed and psychology unravelled in the way we have witnessed since in all lockdown countries. Crucial to the plan was that Italy responded in this way to set the precedent of suspending freedom and imposing fascism in a 'Western liberal democracy'. I emphasised in an

animated video explanation on davidicke.com posted in the summer of 2020 how important it was to the Cult to expand the Chinese lockdown model across the West. Without this, and the bare-faced lie that non-symptomatic people could still transmit a 'disease' they didn't have, there was no way locking down the whole population, sick and not sick, could be pulled off. At just the right time and with no evidence Cult operatives and gofers claimed that people without symptoms could pass on the 'disease'. In the name of protecting the 'vulnerable' like elderly people, who lockdowns would kill by the tens of thousands, we had for the first time healthy people told to isolate as well as the sick. The great majority of people who tested positive had no symptoms because there was nothing wrong with them. It was just a trick made possible by a test not testing for the 'virus'.

Months after my animated video the Gates-funded Professor Neil Ferguson at the Gates-funded Imperial College confirmed that I was right. He didn't say it in those terms, naturally, but he did say it. Ferguson will enter the story shortly for his outrageously crazy 'computer models' that led to Britain, the United States and many other countries following the Chinese and now Italian methods of response. Put another way, following the Cult script. Ferguson said that SAGE, the UK government's scientific advisory group which has controlled 'Covid' policy from the start, wanted to follow the Chinese lockdown model (while they all continued to work and be paid), but they wondered if they could possibly, in Ferguson's words, 'get away with it in Europe'. 'Get away with it'? Who the hell do these moronic, arrogant people think they are? This appalling man Ferguson said that once Italy went into national lockdown they realised they, too, could mimic China:

> It's a communist one-party state, we said. We couldn't get away with it in Europe, we thought … and then Italy did it. And we realised we could. Behind this garbage from Ferguson is a simple fact: Doing the same as China in every country was the plan from the start and Ferguson's 'models' would play a central role in achieving that. It's just a coincidence, of course, and absolutely nothing to worry your little head about.

Oops, sorry, our mistake

Once the Italian segment of the Psyop had done the job it was designed to do a very different story emerged. Italian authorities revealed that 99 percent of those who had 'died from Covid-19' in Italy had one, two, three, or more 'co-morbidities' or illnesses and health problems that could have ended their life. The US Centers for Disease Control and Prevention (CDC) published a figure of 94 percent for Americans dying of 'Covid' while having other serious medical conditions – on average two to three (some five or six) other potential causes of death. In terms of death from an unproven 'virus' I say it is 100 percent. The other one percent in Italy and six percent in the US would presumably have died from 'Covid's' flu-like symptoms with a range of other possible causes in conjunction with a test not testing for the 'virus'. Fox News reported that even more startling figures had emerged in one US county in which 410 of 422 deaths attributed to 'Covid-19' had other potentially deadly health conditions. The Italian National Health Institute said later that the average age of people dying with a 'Covid-19' diagnosis in Italy was about 81. Ninety percent were over 70 with ten percent over 90. In terms of other reasons to die some 80 percent had two or more chronic diseases with half having three or more including cardiovascular problems, diabetes, respiratory problems and cancer. Why is the phantom 'Covid-19' said to kill overwhelmingly old people and hardly affect the young? Old people continually die of many causes and especially respiratory disease which you can re-diagnose 'Covid-19' while young people die in tiny numbers by comparison and rarely of respiratory disease. Old people 'die of Covid' because they die of other things that can be redesignated 'Covid' and it really is that simple.

Flu has flown

The blueprint was in place. Get your illusory 'cases' from a test not testing for the 'virus' and redesignate other causes of death as 'Covid-19'. You have an instant 'pandemic' from something that is nothing more than a computer-generated fiction. With near-on a

billion people having 'flu-like' symptoms every year the potential was limitless and we can see why flu quickly and apparently miraculously disappeared *worldwide* by being diagnosed 'Covid-19'. The painfully bloody obvious was explained away by the childlike media in headlines like this in the UK '*Independent*': 'Not a single case of flu detected by Public Health England this year as Covid restrictions suppress virus'. I kid you not. The masking, social distancing and house arrest that did not make the 'Covid virus' disappear somehow did so with the 'flu virus'. Even worse the article, by a bloke called Samuel Lovett, suggested that maybe the masking, sanitising and other 'Covid' measures should continue to keep the flu away. With a ridiculousness that disturbs your breathing (it's 'Covid-19') the said Lovett wrote: 'With widespread social distancing and mask-wearing measures in place throughout the UK, the usual routes of transmission for influenza have been blocked.' He had absolutely no evidence to support that statement, but look at the consequences of him acknowledging the obvious. With flu not disappearing at all and only being relabelled 'Covid-19' he would have to contemplate that 'Covid' was a hoax on a scale that is hard to imagine. You need guts and commitment to truth to even go there and that's clearly something Samuel Lovett does not have in abundance. He would never have got it through the editors anyway.

Tens of thousands die in the United States alone every winter from flu including many with pneumonia complications. CDC figures record *45 million* Americans diagnosed with flu in 2017-2018 of which 61,000 died and some reports claim 80,000. Where was the same hysteria then that we have seen with 'Covid-19'? Some 250,000 Americans are admitted to hospital with pneumonia every year with about 50,000 cases proving fatal. About 65 million suffer respiratory disease every year and three million deaths makes this the third biggest cause of death worldwide. You only have to redesignate a portion of all these people 'Covid-19' and you have an instant global pandemic or the *appearance* of one. Why would doctors do this? They are told to do this and all but a few dare not refuse those who must be obeyed. Doctors in general are not researching their own

knowledge and instead take it direct and unquestioned from the authorities that own them and their careers. The authorities say they must now diagnose these symptoms 'Covid-19' and not flu, or whatever, and they do it. Dark suits say put 'Covid-19' on death certificates no matter what the cause of death and the doctors do it. Renegade Minds don't fall for the illusion that doctors and medical staff are all highly-intelligent, highly-principled, seekers of medical truth. *Some are*, but not the majority. They are repeaters, gofers, and yes sir, no sir, purveyors of what the system demands they purvey. The 'Covid' con is not merely confined to diseases of the lungs. Instructions to doctors to put 'Covid-19' on death certificates for anyone dying of *anything* within 28 days (or much more) of a positive test not testing for the 'virus' opened the floodgates. The term dying *with* 'Covid' and not *of* 'Covid' was coined to cover the truth. Whether it was a *with* or an *of* they were all added to the death numbers attributed to the 'deadly virus' compiled by national governments and globally by the Gates-funded Johns Hopkins operation in the United States that was so involved in those 'pandemic' simulations. Fraudulent deaths were added to the ever-growing list of fraudulent 'cases' from false positives from a false test. No wonder Professor Walter Ricciardi, scientific advisor to the Italian minister of health, said after the Lombardy hysteria had done its job that 'Covid' death rates were due to Italy having the second oldest population in the world and to *how hospitals record deaths*:

The way in which we code deaths in our country is very generous in the sense that all the people who die in hospitals with the coronavirus are deemed to be dying of the coronavirus. On re-evaluation by the National Institute of Health, only 12 per cent of death certificates have shown a direct causality from coronavirus, while 88 per cent of patients who have died have at least one pre-morbidity – many had two or three.

This is extraordinary enough when you consider the propaganda campaign to use Italy to terrify the world, but how can they even say twelve percent were genuine when the 'virus' has not been shown to exist, its 'code' is a computer program, and diagnosis comes from a test not testing for it? As in China, and soon the world, 'Covid-19' in

Italy was a redesignation of diagnosis. Lies and corruption were to become the real 'pandemic' fuelled by a pathetically-compliant medical system taking its orders from the tiny few at the top of their national hierarchy who answered to the World Health Organization which answers to Gates and the Cult. Doctors were told – ordered – to diagnose a particular set of symptoms 'Covid-19' and put that on the death certificate for any cause of death if the patient had tested positive with a test not testing for the virus or had 'Covid' symptoms like the flu. The United States even introduced big financial incentives to manipulate the figures with hospitals receiving £4,600 from the Medicare system for diagnosing someone with regular pneumonia, $13,000 if they made the diagnosis from the same symptoms 'Covid-19' pneumonia, and $39, 000 if they put a 'Covid' diagnosed patient on a ventilator that would almost certainly kill them. A few – painfully and pathetically few – medical whistleblowers revealed (before Cult-owned YouTube deleted their videos) that they had been instructed to 'let the patient crash' and put them straight on a ventilator instead of going through a series of far less intrusive and dangerous methods as they would have done before the pandemic hoax began and the financial incentives kicked in. We are talking cold-blooded murder given that ventilators are so damaging to respiratory systems they are usually the last step before heaven awaits. Renegade Minds never fall for the belief that people in white coats are all angels of mercy and cannot be full-on psychopaths. I have explained in detail in *The Answer* how what I am describing here played out across the world coordinated by the World Health Organization through the medical hierarchies in almost every country.

Medical scientist calls it

Information about the non-existence of the 'virus' began to emerge for me in late March, 2020, and mushroomed after that. I was sent an email by Sir Julian Rose, a writer, researcher, and organic farming promotor, from a medical scientist friend of his in the United States. Even at that early stage in March the scientist was able to explain

how the 'Covid' hoax was being manipulated. He said there were no reliable tests for a specific 'Covid-19 virus' and nor were there any reliable agencies or media outlets for reporting numbers of actual 'Covid-19' cases. We have seen in the long period since then that he was absolutely right. 'Every action and reaction to Covid-19 is based on totally flawed data and we simply cannot make accurate assessments,' he said. Most people diagnosed with 'Covid-19' were showing nothing more than cold and flu-like symptoms 'because most coronavirus strains *are* nothing more than cold/flu-like symptoms'. We had farcical situations like an 84-year-old German man testing positive for 'Covid-19' and his nursing home ordered to quarantine only for him to be found to have a common cold. The scientist described back then why PCR tests and what he called the 'Mickey Mouse test kits' were useless for what they were claimed to be identifying. 'The idea these kits can isolate a specific virus like Covid-19 is nonsense,' he said. Significantly, he pointed out that 'if you want to create a totally false panic about a totally false pandemic – pick a coronavirus'. This is exactly what the Cult-owned Gates, World Economic Forum and Johns Hopkins University did with their Event 201 'simulation' followed by their real-life simulation called the 'pandemic'. The scientist said that all you had to do was select the sickest of people with respiratory-type diseases in a single location – 'say Wuhan' – and administer PCR tests to them. You can then claim that anyone showing 'viral sequences' similar to a coronavirus 'which will inevitably be quite a few' is suffering from a 'new' disease:

> Since you already selected the sickest flu cases a fairly high proportion of your sample will go on to die. You can then say this 'new' virus has a CFR [case fatality rate] higher than the flu and use this to infuse more concern and do more tests which will of course produce more 'cases', which expands the testing, which produces yet more 'cases' and so on and so on. Before long you have your 'pandemic', and all you have done is use a simple test kit trick to convert the worst flu and pneumonia cases into something new that doesn't ACTUALLY EXIST [my emphasis].

He said that you then 'just run the same scam in other countries' and make sure to keep the fear message running high 'so that people

will feel panicky and less able to think critically'. The only problem to overcome was the fact *there is no* actual new deadly pathogen and only regular sick people. This meant that deaths from the 'new deadly pathogen' were going to be way too low for a real new deadly virus pandemic, but he said this could be overcome in the following ways – all of which would go on to happen:

1. You can claim this is just the beginning and more deaths are imminent [you underpin this with fantasy 'computer projections']. Use this as an excuse to quarantine everyone and then claim the quarantine prevented the expected millions of dead.

2. You can [say that people] 'minimizing' the dangers are irresponsible and bully them into not talking about numbers.

3. You can talk crap about made up numbers hoping to blind people with pseudoscience.

4. You can start testing well people (who, of course, will also likely have shreds of coronavirus [RNA] in them) and thus inflate your 'case figures' with 'asymptomatic carriers' (you will of course have to spin that to sound deadly even though any virologist knows the more symptom-less cases you have the less deadly is your pathogen).

The scientist said that if you take these simple steps 'you can have your own entirely manufactured pandemic up and running in weeks'. His analysis made so early in the hoax was brilliantly prophetic of what would actually unfold. Pulling all the information together in these recent chapters we have this is simple 1, 2, 3, of how you can delude virtually the entire human population into believing in a 'virus' that doesn't exist:

- A 'Covid case' is someone who tests positive with a test not testing for the 'virus'.

- A 'Covid death' is someone who dies of *any cause* within 28 days (or much longer) of testing positive with a test not testing for the 'virus.

- Asymptomatic means there is nothing wrong with you, but they claim you can pass on what you don't have to justify locking

down (quarantining) healthy people in totality.

The foundations of the hoax are that simple. A study involving ten million people in Wuhan, published in November, 2020, demolished the whole lie about those without symptoms passing on the 'virus'. They found '300 asymptomatic cases' and traced their contacts to find that not one of them was detected with the 'virus'. 'Asymptomatic' patients and their contacts were isolated for no less than two weeks and nothing changed. I know it's all crap, but if you are going to claim that those without symptoms can transmit 'the virus' then you must produce evidence for that and they never have. Even World Health Organization official Dr Maria Van Kerkhove, head of the emerging diseases and zoonosis unit, said as early as June, 2020, that she doubted the validity of asymptomatic transmission. She said that 'from the data we have, it still seems to be rare that an asymptomatic person actually transmits onward to a secondary individual' and by 'rare' she meant that she couldn't cite any case of asymptomatic transmission.

The Ferguson factor

The problem for the Cult as it headed into March, 2020, when the script had lockdown due to start, was that despite all the manipulation of the case and death figures they still did not have enough people alleged to have died from 'Covid' to justify mass house arrest. This was overcome in the way the scientist described: 'You can claim this is just the beginning and more deaths are imminent … Use this as an excuse to quarantine everyone and then claim the quarantine prevented the expected millions of dead.' Enter one Professor Neil Ferguson, the Gates-funded 'epidemiologist' at the Gates-funded Imperial College in London. Ferguson is Britain's Christian Drosten in that he has a dire record of predicting health outcomes, but is still called upon to advise government on the next health outcome when another 'crisis' comes along. This may seem to be a strange and ridiculous thing to do. Why would you keep turning for policy guidance to people who have a history of being

monumentally wrong? Ah, but it makes sense from the Cult point of view. These 'experts' keep on producing predictions that suit the Cult agenda for societal transformation and so it was with Neil Ferguson as he revealed his horrific (and clearly insane) computer model predictions that allowed lockdowns to be imposed in Britain, the United States and many other countries. Ferguson does not have even an A-level in biology and would appear to have no formal training in computer modelling, medicine or epidemiology, according to Derek Winton, an MSc in Computational Intelligence. He wrote an article somewhat aghast at what Ferguson did which included taking no account of respiratory disease 'seasonality' which means it is far worse in the winter months. Who would have thought that respiratory disease could be worse in the winter? Well, certainly not Ferguson.

The massively China-connected Imperial College and its bizarre professor provided the excuse for the long-incubated Chinese model of human control to travel westward at lightning speed. Imperial College confirms on its website that it collaborates with the Chinese Research Institute; publishes more than 600 research papers every year with Chinese research institutions; has 225 Chinese staff; 2,600 Chinese students – the biggest international group; 7,000 former students living in China which is the largest group outside the UK; and was selected for a tour by China's President Xi Jinping during his state visit to the UK in 2015. The college takes major donations from China and describes itself as the UK's number one university collaborator with Chinese research institutions. The China communist/fascist government did not appear phased by the woeful predictions of Ferguson and Imperial when during the lockdown that Ferguson induced the college signed a five-year collaboration deal with China tech giant Huawei that will have Huawei's indoor 5G network equipment installed at the college's West London tech campus along with an 'AI cloud platform'. The deal includes Chinese sponsorship of Imperial's Venture Catalyst entrepreneurship competition. Imperial is an example of the enormous influence the Chinese government has within British and North American

universities and research centres – and further afield. Up to 200 academics from more than a dozen UK universities are being investigated on suspicion of 'unintentionally' helping the Chinese government build weapons of mass destruction by 'transferring world-leading research in advanced military technology such as aircraft, missile designs and cyberweapons'. Similar scandals have broken in the United States, but it's all a coincidence. Imperial College serves the agenda in many other ways including the promotion of every aspect of the United Nations Agenda 21/2030 (the Great Reset) and produced computer models to show that human-caused 'climate change' is happening when in the real world it isn't. Imperial College is driving the climate agenda as it drives the 'Covid' agenda (both Cult hoaxes) while Patrick Vallance, the UK government's Chief Scientific Adviser on 'Covid', was named Chief Scientific Adviser to the UN 'climate change' conference known as COP26 hosted by the government in Glasgow, Scotland. 'Covid' and 'climate' are fundamentally connected.

Professor Woeful

From Imperial's bosom came Neil Ferguson still advising government despite his previous disasters and it was announced early on that he and other key people like UK Chief Medical Adviser Chris Whitty had caught the 'virus' as the propaganda story was being sold. Somehow they managed to survive and we had Prime Minister Boris Johnson admitted to hospital with what was said to be a severe version of the 'virus' in this same period. His whole policy and demeanour changed when he returned to Downing Street. It's a small world with these government advisors – especially in their communal connections to Gates – and Ferguson had partnered with Whitty to write a paper called 'Infectious disease: Tough choices to reduce Ebola transmission' which involved another scare-story that didn't happen. Ferguson's 'models' predicted that up to150, 000 could die from 'mad cow disease', or BSE, and its version in sheep if it was transmitted to humans. BSE was not transmitted and instead triggered by an organophosphate pesticide used to treat a pest on

cows. Fewer than 200 deaths followed from the human form. Models by Ferguson and his fellow incompetents led to the unnecessary culling of millions of pigs, cattle and sheep in the foot and mouth outbreak in 2001 which destroyed the lives and livelihoods of farmers and their families who had often spent decades building their herds and flocks. Vast numbers of these animals did not have foot and mouth and had no contact with the infection. Another 'expert' behind the cull was Professor Roy Anderson, a computer modeller at Imperial College specialising in the epidemiology of *human*, not animal, disease. Anderson has served on the Bill and Melinda Gates Grand Challenges in Global Health advisory board and chairs another Gates-funded organisation. Gates is everywhere.

In a precursor to the 'Covid' script Ferguson backed closing schools 'for prolonged periods' over the swine flu 'pandemic' in 2009 and said it would affect a third of the world population if it continued to spread at the speed he claimed to be happening. His mates at Imperial College said much the same and a news report said: 'One of the authors, the epidemiologist and disease modeller Neil Ferguson, who sits on the World Health Organisation's emergency committee for the outbreak, said the virus had "full pandemic potential".' Professor Liam Donaldson, the Chris Whitty of his day as Chief Medical Officer, said the worst case could see 30 percent of the British people infected by swine flu with 65,000 dying. Ferguson and Donaldson were indeed proved correct when at the end of the year the number of deaths attributed to swine flu was 392. The term 'expert' is rather liberally applied unfortunately, not least to complete idiots. Swine flu 'projections' were great for GlaxoSmithKline (GSK) as millions rolled in for its Pandemrix influenza vaccine which led to brain damage with children most affected. The British government (taxpayers) paid out more than £60 million in compensation after GSK was given immunity from prosecution. Yet another 'Covid' déjà vu. Swine flu was supposed to have broken out in Mexico, but Dr Wolfgang Wodarg, a German doctor, former member of parliament and critic of the 'Covid' hoax, observed 'the spread of swine flu' in Mexico City at the time. He

said: 'What we experienced in Mexico City was a very mild flu which did not kill more than usual – which killed even fewer people than usual.' Hyping the fear against all the facts is not unique to 'Covid' and has happened many times before. Ferguson is reported to have over-estimated the projected death toll of bird flu (H5N1) by some three million-fold, but bird flu vaccine makers again made a killing from the scare. This is some of the background to the Neil Ferguson who produced the perfectly-timed computer models in early 2020 predicting that half a million people would die in Britain without draconian lockdown and 2.2 million in the United States. Politicians panicked, people panicked, and lockdowns of alleged short duration were instigated to 'flatten the curve' of cases gleaned from a test not testing for the 'virus'. I said at the time that the public could forget the 'short duration' bit. This was an agenda to destroy the livelihoods of the population and force them into mass control through dependency and there was going to be nothing 'short' about it. American researcher Daniel Horowitz described the consequences of the 'models' spewed out by Gates-funded Ferguson and Imperial College:

> What led our government and the governments of many other countries into panic was a single Imperial College of UK study, funded by global warming activists, that predicted 2.2 million deaths if we didn't lock down the country. In addition, the reported 8-9% death rate in Italy scared us into thinking there was some other mutation of this virus that they got, which might have come here.
>
> Together with the fact that we were finally testing and had the ability to actually report new cases, we thought we were headed for a death spiral. But again … we can't flatten a curve if we don't know when the curve started.

How about it *never* started?

Giving them what they want

An investigation by German news outlet *Welt Am Sonntag (World on Sunday)* revealed how in March, 2020, the German government gathered together 'leading scientists from several research institutes and universities' and 'together, they were to produce a [modelling]

paper that would serve as legitimization for further tough political measures'. The Cult agenda was justified by computer modelling not based on evidence or reality; it was specifically constructed to justify the Cult demand for lockdowns all over the world to destroy the independent livelihoods of the global population. All these modellers and everyone responsible for the 'Covid' hoax have a date with a trial like those in Nuremberg after World War Two when Nazis faced the consequences of their war crimes. These corrupt-beyond-belief 'modellers' wrote the paper according to government instructions and it said that that if lockdown measures were lifted then up to one million Germans would die from 'Covid-19' adding that some would die 'agonizingly at home, gasping for breath' unable to be treated by hospitals that couldn't cope. All lies. No matter – it gave the Cult all that it wanted. What did long-time government 'modeller' Neil Ferguson say? If the UK and the United States didn't lockdown half a million would die in Britain and 2.2 million Americans. Anyone see a theme here? 'Modellers' are such a crucial part of the lockdown strategy that we should look into their background and follow the money. Researcher Rosemary Frei produced an excellent article headlined 'The Modelling-paper Mafiosi'. She highlights a guy called John Edmunds, a British epidemiologist, and professor in the Faculty of Epidemiology and Population Health at the London School of Hygiene & Tropical Medicine. He studied at Imperial College. Edmunds is a member of government 'Covid' advisory bodies which have been dictating policy, the New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG) and the Scientific Advisory Group for Emergencies (SAGE).

Ferguson, another member of NERVTAG and SAGE, led the way with the original 'virus' and Edmunds has followed in the 'variant' stage and especially the so-called UK or Kent variant known as the 'Variant of Concern' (VOC) B.1.1.7. He said in a co-written report for the Centre for Mathematical modelling of Infectious Diseases at the London School of Hygiene and Tropical Medicine, with input from the Centre's 'Covid-19' Working Group, that there was 'a realistic

possibility that VOC B.1.1.7 is associated with an increased risk of death compared to non-VOC viruses'. Fear, fear, fear, get the vaccine, fear, fear, fear, get the vaccine. Rosemary Frei reveals that almost all the paper's authors and members of the modelling centre's 'Covid-19' Working Group receive funding from the Bill and Melinda Gates Foundation and/or the associated Gates-funded Wellcome Trust. The paper was published by e-journal *Medr χiv* which only publishes papers not peer-reviewed and the journal was established by an organisation headed by Facebook's Mark Zuckerberg and his missus. What a small world it is. Frei discovered that Edmunds is on the Scientific Advisory Board of the Coalition for Epidemic Preparedness Innovations (CEPI) which was established by the Bill and Melinda Gates Foundation, Klaus Schwab's Davos World Economic Forum and Big Pharma giant Wellcome. CEPI was 'launched in Davos [in 2017] to develop vaccines to stop future epidemics', according to its website. 'Our mission is to accelerate the development of vaccines against emerging infectious diseases and enable equitable access to these vaccines for people during outbreaks.' What kind people they are. Rosemary Frei reveals that Public Health England (PHE) director Susan Hopkins is an author of her organisation's non-peer-reviewed reports on 'new variants'. Hopkins is a professor of infectious diseases at London's Imperial College which is gifted tens of millions of dollars a year by the Bill and Melinda Gates Foundation. Gates-funded modelling disaster Neil Ferguson also co-authors Public Health England reports and he spoke in December, 2020, about the potential danger of the B.1.1.7. 'UK variant' promoted by Gates-funded modeller John Edmunds. When I come to the 'Covid vaccines' the 'new variants' will be shown for what they are – bollocks.

Connections, connections

All these people and modellers are lockdown-obsessed or, put another way, they demand what the Cult demands. Edmunds said in January, 2021, that to ease lockdowns too soon would be a disaster and they had to 'vaccinate much, much, much more widely than the

elderly'. Rosemary Frei highlights that Edmunds is married to Jeanne Pimenta who is described in a LinkedIn profile as director of epidemiology at GlaxoSmithKline (GSK) and she held shares in the company. Patrick Vallance, co-chair of SAGE and the government's Chief Scientific Adviser, is a former executive of GSK and has a deferred bonus of shares in the company worth £600,000. GSK has serious business connections with Bill Gates and is collaborating with mRNA-'vaccine' company CureVac to make 'vaccines' for the new variants that Edmunds is talking about. GSK is planning a 'Covid vaccine' with drug giant Sanofi. Puppet Prime Minister Boris Johnson announced in the spring of 2021 that up to 60 million vaccine doses were to be made at the GSK facility at Barnard Castle in the English North East. Barnard Castle, with a population of just 6,000, was famously visited in breach of lockdown rules in April, 2020, by Johnson aide Dominic Cummings who said that he drove there 'to test his eyesight' before driving back to London. Cummings would be better advised to test his integrity – not that it would take long. The GSK facility had nothing to do with his visit then although I'm sure Patrick Vallance would have been happy to arrange an introduction and some tea and biscuits. Ruthless psychopath Gates has made yet another fortune from vaccines in collaboration with Big Pharma companies and gushes at the phenomenal profits to be made from vaccines – more than a 20-to-1 return as he told one interviewer. Gates also tweeted in December, 2019, with the foreknowledge of what was coming: 'What's next for our foundation? I'm particularly excited about what the next year could mean for one of the best buys in global health: vaccines.'

Modeller John Edmunds is a big promotor of vaccines as all these people appear to be. He's the dean of the London School of Hygiene & Tropical Medicine's Faculty of Epidemiology and Population Health which is primarily funded by the Bill and Melinda Gates Foundation and the Gates-established and funded GAVI vaccine alliance which is the Gates vehicle to vaccinate the world. The organisation Doctors Without Borders has described GAVI as being 'aimed more at supporting drug-industry desires to promote new

products than at finding the most efficient and sustainable means for fighting the diseases of poverty'. But then that's why the psychopath Gates created it. John Edmunds said in a video that the London School of Hygiene & Tropical Medicine is involved in every aspect of vaccine development including large-scale clinical trials. He contends that mathematical modelling can show that vaccines protect individuals and society. That's on the basis of shit in and shit out, I take it. Edmunds serves on the UK Vaccine Network as does Ferguson and the government's foremost 'Covid' adviser, the grim-faced, dark-eyed Chris Whitty. The Vaccine Network says it works 'to support the government to identify and shortlist targeted investment opportunities for the most promising vaccines and vaccine technologies that will help combat infectious diseases with epidemic potential, and to address structural issues related to the UK's broader vaccine infrastructure'. Ferguson is acting Director of the Imperial College Vaccine Impact Modelling Consortium which has funding from the Bill and Melina Gates Foundation and the Gates-created GAVI 'vaccine alliance'. Anyone wonder why these characters see vaccines as the answer to every problem? Ferguson is wildly enthusiastic in his support for GAVI's campaign to vaccine children en masse in poor countries. You would expect someone like Gates who has constantly talked about the need to reduce the population to want to fund vaccines to keep more people alive. I'm sure that's why he does it. The John Edmunds London School of Hygiene & Tropical Medicine (LSHTM) has a Vaccines Manufacturing Innovation Centre which develops, tests and commercialises vaccines. Rosemary Frei writes:

> The vaccines centre also performs affiliated activities like combating 'vaccine hesitancy'. The latter includes the Vaccine Confidence Project. The project's stated purpose is, among other things, 'to provide analysis and guidance for early response and engagement with the public to ensure sustained confidence in vaccines and immunisation'. The Vaccine Confidence Project's director is LSHTM professor Heidi Larson. For more than a decade she's been researching how to combat vaccine hesitancy.

How the bloody hell can blokes like John Edmunds and Neil Ferguson with those connections and financial ties model 'virus' case

and death projections for the government and especially in a way that gives their paymasters like Gates exactly what they want? It's insane, but this is what you find throughout the world.

'Covid' is not dangerous, oops, wait, yes it is

Only days before Ferguson's nightmare scenario made Jackboot Johnson take Britain into a China-style lockdown to save us from a deadly 'virus' the UK government website gov.uk was reporting something very different to Ferguson on a page of official government guidance for 'high consequence infectious diseases (HCID)'. It said this about 'Covid-19':

As of 19 March 2020, COVID-19 *is no longer considered to be a high consequence infectious diseases (HCID) in the UK* [my emphasis]. The 4 nations public health HCID group made an interim recommendation in January 2020 to classify COVID-19 as an HCID. This was based on consideration of the UK HCID criteria about the virus and the disease with information available during the early stages of the outbreak.

Now that more is known about COVID-19, the public health bodies in the UK have reviewed the most up to date information about COVID-19 against the UK HCID criteria. They have determined that several features have now changed; in particular, more information is available about mortality rates (low overall), and there is now greater clinical awareness and a specific and sensitive laboratory test, the availability of which continues to increase. The Advisory Committee on Dangerous Pathogens (ACDP) is also of the opinion that COVID-19 should no longer be classified as an HCID.

Soon after the government had been exposed for downgrading the risk they upgraded it again and everyone was back to singing from the same Cult hymn book. Ferguson and his fellow Gates clones indicated that lockdowns and restrictions would have to continue until a Gates-funded vaccine was developed. Gates said the same because Ferguson and his like were repeating the Gates script which is the Cult script. 'Flatten the curve' became an ongoing nightmare of continuing lockdowns with periods in between of severe restrictions in pursuit of destroying independent incomes and had nothing to do with protecting health about which the Cult gives not a shit. Why wouldn't Ferguson be pushing a vaccine 'solution' when he's owned by vaccine-obsessive Gates who makes a fortune from them and

when Ferguson heads the Vaccine Impact Modelling Consortium at Imperial College funded by the Gates Foundation and GAVI, the 'vaccine alliance', created by Gates as his personal vaccine promotion operation? To compound the human catastrophe that Ferguson's 'models' did so much to create he was later exposed for breaking his own lockdown rules by having sexual liaisons with his married girlfriend Antonia Staats at his home while she was living at another location with her husband and children. Staats was a 'climate' activist and senior campaigner at the Soros-funded Avaaz which I wouldn't trust to tell me that grass is green. Ferguson had to resign as a government advisor over this hypocrisy in May, 2020, but after a period of quiet he was back being quoted by the ridiculous media on the need for more lockdowns and a vaccine rollout. Other government-advising 'scientists' from Imperial College' held the fort in his absence and said lockdown could be indefinite until a vaccine was found. The Cult script was being sung by the payrolled choir. I said there was no intention of going back to 'normal' when the 'vaccine' came because the 'vaccine' is part of a very different agenda that I will discuss in Human 2.0. Why would the Cult want to let the world go back to normal when destroying that normal forever was the whole point of what was happening? House arrest, closing businesses and schools through lockdown, (un)social distancing and masks all followed the Ferguson fantasy models. Again as I predicted (these people are so predictable) when the 'vaccine' arrived we were told that house arrest, lockdown, (un)social distancing and masks would still have to continue. I will deal with the masks in the next chapter because they are of fundamental importance.

Where's the 'pandemic'?

Any mildly in-depth assessment of the figures revealed what was really going on. Cult-funded and controlled organisations still have genuine people working within them such is the number involved. So it is with Genevieve Briand, assistant program director of the Applied Economics master's degree program at Johns Hopkins

University. She analysed the impact that 'Covid-19' had on deaths from *all* causes in the United States using official data from the CDC for the period from early February to early September, 2020. She found that allegedly 'Covid' *related*-deaths exceeded those from heart disease which she found strange with heart disease always the biggest cause of fatalities. Her research became even more significant when she noted the sudden decline in 2020 of *all* non-'Covid' deaths: 'This trend is completely contrary to the pattern observed in all previous years … the total decrease in deaths by other causes almost exactly equals the increase in deaths by Covid-19.' This was such a game, set and match in terms of what was happening that Johns Hopkins University deleted the article on the grounds that it 'was being used to support false and dangerous inaccuracies about the impact of the pandemic'. No – because it exposed the scam from official CDC figures and this was confirmed when those figures were published in January, 2021. Here we can see the effect of people dying from heart attacks, cancer, road accidents and gunshot wounds – *anything* – having 'Covid-19' on the death certificate along with those diagnosed from 'symptoms' who had even not tested positive with a test not testing for the 'virus'. I am not kidding with the gunshot wounds, by the way. Brenda Bock, coroner in Grand County, Colorado, revealed that two gunshot victims tested positive for the 'virus' within the previous 30 days and were therefore classified as 'Covid deaths'. Bock said: 'These two people had tested positive for Covid, but that's not what killed them. A gunshot wound is what killed them.' She said she had not even finished her investigation when the state listed the gunshot victims as deaths due to the 'virus'. The death and case figures for 'Covid-19' are an absolute joke and yet they are repeated like parrots by the media, politicians and alleged medical 'experts'. The official Cult narrative is the only show in town.

Genevieve Briand found that deaths from all causes were not exceptional in 2020 compared with previous years and a Spanish magazine published figures that said the same about Spain which was a 'Covid' propaganda hotspot at one point. *Discovery Salud*, a

health and medicine magazine, quoted government figures which showed how 17,000 *fewer* people died in Spain in 2020 than in 2019 and more than 26,000 fewer than in 2018. The age-standardised mortality rate for England and Wales when age distribution is taken into account was significantly lower in 2020 than the 1970s, 80s and 90s, and was only the ninth highest since 2000. Where is the 'pandemic'?

Post mortems and autopsies virtually disappeared for 'Covid' deaths amid claims that 'virus-infected' bodily fluids posed a risk to those carrying out the autopsy. This was rejected by renowned German pathologist and forensic doctor Klaus Püschel who said that he and his staff had by then done 150 autopsies on 'Covid' patients with no problems at all. He said they were needed to know why some 'Covid' patients suffered blood clots and not severe respiratory infections. The 'virus' is, after all, called SARS or 'severe acute respiratory syndrome'. I highlighted in the spring of 2020 this phenomenon and quoted New York intensive care doctor Cameron Kyle-Sidell who posted a soon deleted YouTube video to say that they had been told to prepare to treat an infectious disease called 'Covid-19', but that was not what they were dealing with. Instead he likened the lung condition of the most severely ill patients to what you would expect with cabin depressurisation in a plane at 30,000 feet or someone dropped on the top of Everest without oxygen or acclimatisation. I have never said this is not happening to a small minority of alleged 'Covid' patients – I am saying this is not caused by a phantom 'contagious virus'. Indeed Kyle-Sidell said that 'Covid-19' was not the disease they were told was coming their way. 'We are operating under a medical paradigm that is untrue,' he said, and he believed they were treating the wrong disease: 'These people are being slowly starved of oxygen.' Patients would take off their oxygen masks in a state of fear and stress and while they were blue in the face on the brink of death. They did not look like patients dying of pneumonia. You can see why they don't want autopsies when their virus doesn't exist and there is another condition in some people that they don't wish to be uncovered. I should add here that

the 5G system of millimetre waves was being rapidly introduced around the world in 2020 and even more so now as they fire 5G at the Earth from satellites. At 60 gigahertz within the 5G range that frequency interacts with the oxygen molecule and stops people breathing in sufficient oxygen to be absorbed into the bloodstream. They are installing 5G in schools and hospitals. The world is not mad or anything. 5G can cause major changes to the lungs and blood as I detail in *The Answer* and these consequences are labelled 'Covid-19', the alleged symptoms of which can be caused by 5G and other electromagnetic frequencies as cells respond to radiation poisoning.

The 'Covid death' scam

Dr Scott Jensen, a Minnesota state senator and medical doctor, exposed 'Covid' Medicare payment incentives to hospitals and death certificate manipulation. He said he was sent a seven-page document by the US Department of Health 'coaching' him on how to fill out death certificates which had never happened before. The document said that he didn't need to have a laboratory test for 'Covid-19' to put that on the death certificate and that shocked him when death certificates are supposed to be about facts. Jensen described how doctors had been 'encouraged, if not pressured' to make a diagnosis of 'Covid-19' if they thought it was probable or *'presumed*'. No positive test was necessary – not that this would have mattered anyway. He said doctors were told to diagnose 'Covid' by symptoms when these were the same as colds, allergies, other respiratory problems, and certainly with influenza which 'disappeared' in the 'Covid' era. A common sniffle was enough to get the dreaded verdict. Ontario authorities decreed that a single care home resident with *one* symptom from a long list must lead to the isolation of the entire home. Other courageous doctors like Jensen made the same point about death figure manipulation and how deaths by other causes were falling while 'Covid-19 deaths' were rising at the same rate due to re-diagnosis. Their videos rarely survive long on YouTube with its Cult-supporting algorithms courtesy of CEO Susan Wojcicki and her bosses at Google. Figure-tampering was so glaring

and ubiquitous that even officials were letting it slip or outright saying it. UK chief scientific adviser Patrick Vallance said on one occasion that 'Covid' on the death certificate doesn't mean 'Covid' was the cause of death (so why the hell is it there?) and we had the rare sight of a BBC reporter telling the truth when she said: 'Someone could be successfully treated for Covid, in say April, discharged, and then in June, get run over by a bus and die … That person would still be counted as a Covid death in England.' Yet the BBC and the rest of the world media went on repeating the case and death figures as if they were real. Illinois Public Health Director Dr Ngozi Ezike revealed the deceit while her bosses must have been clenching their buttocks:

> If you were in a hospice and given a few weeks to live and you were then found to have Covid that would be counted as a Covid death. [There might be] a clear alternate cause, but it is still listed as a Covid death. So everyone listed as a Covid death doesn't mean that was the cause of the death, but that they had Covid at the time of death.

Yes, a 'Covid virus' never shown to exist and tested for with a test not testing for the 'virus'. In the first period of the pandemic hoax through the spring of 2020 the process began of designating almost everything a 'Covid' death and this has continued ever since. I sat in a restaurant one night listening to a loud conversation on the next table where a family was discussing in bewilderment how a relative who had no symptoms of 'Covid', and had died of a long-term problem, could have been diagnosed a death by the 'virus'. I could understand their bewilderment. If they read this book they will know why this medical fraud has been perpetrated the world over.

Some media truth shock

The media ignored the evidence of death certificate fraud until eventually one columnist did speak out when she saw it first-hand. Bel Mooney is a long-time national newspaper journalist in Britain currently working for the *Daily Mail*. Her article on February 19th, 2021, carried this headline: 'My dad Ted passed three Covid tests

and died of a chronic illness yet he's officially one of Britain's 120,000 victims of the virus and is far from alone ... so how many more are there?' She told how her 99-year-old father was in a care home with a long-standing chronic obstructive pulmonary disease and vascular dementia. Maybe, but he was still aware enough to tell her from the start that there was no 'virus' and he refused the 'vaccine' for that reason. His death was not unexpected given his chronic health problems and Mooney said she was shocked to find that 'Covid-19' was declared the cause of death on his death certificate. She said this was a 'bizarre and unacceptable untruth' for a man with long-time health problems who had tested negative twice at the home for the 'virus'. I was also shocked by this story although not by what she said. I had been highlighting the death certificate manipulation for ten months. It was the confirmation that a professional full-time journalist only realised this was going on when it affected her directly and neither did she know that whether her dad tested positive or negative was irrelevant with the test not testing for the 'virus'. Where had she been? She said she did not believe in 'conspiracy theories' without knowing I'm sure that this and 'conspiracy theorists' were terms put into widespread circulation by the CIA in the 1960s to discredit those who did not accept the ridiculous official story of the Kennedy assassination. A blanket statement of 'I don't believe in conspiracy theories' is always bizarre. The dictionary definition of the term alone means the world is drowning in conspiracies. What she said was even more daft when her dad had just been affected by the 'Covid' conspiracy. Why else does she think that 'Covid-19' was going on the death certificates of people who died of something else?

To be fair once she saw from personal experience what was happening she didn't mince words. Mooney was called by the care home on the morning of February 9th to be told her father had died in his sleep. When she asked for the official cause of death what came back was 'Covid-19'. Mooney challenged this and was told there had been deaths from Covid on the dementia floor (confirmed by a test not testing for the 'virus') so they considered it 'reasonable

to assume'. 'But doctor,' Mooney rightly protested, 'an assumption isn't a diagnosis.' She said she didn't blame the perfectly decent and sympathetic doctor – 'he was just doing his job'. Sorry, but that's *bullshit*. He wasn't doing his job at all. He was putting a false cause of death on the death certificate and that is a criminal offence for which he should be brought to account and the same with the millions of doctors worldwide who have done the same. They were not doing their job they were following orders and that must not wash at new Nuremberg trials any more than it did at the first ones. Mooney's doctor was 'assuming' (presuming) as he was told to, but 'just following orders' makes no difference to his actions. A doctor's job is to serve the patient and the truth, not follow orders, but that's what they have done all over the world and played a central part in making the 'Covid' hoax possible with all its catastrophic consequences for humanity. Shame on them and they must answer for their actions. Mooney said her disquiet worsened when she registered her father's death by telephone and was told by the registrar there had been very many other cases like hers where 'the deceased' had not tested positive for 'Covid' yet it was recorded as the cause of death. The test may not matter, but those involved at their level *think* it matters and it shows a callous disregard for accurate diagnosis. The pressure to do this is coming from the top of the national 'health' pyramids which in turn obey the World Health Organization which obeys Gates and the Cult. Mooney said the registrar agreed that this must distort the national figures adding that 'the strangest thing is that every winter we record countless deaths from flu, and this winter there have been none. Not one!' She asked if the registrar thought deaths from flu were being misdiagnosed and lumped together with 'Covid' deaths. The answer was a 'puzzled yes'. Mooney said that the funeral director said the same about 'Covid' deaths which had nothing to do with 'Covid'. They had lost count of the number of families upset by this and other funeral companies in different countries have had the same experience. Mooney wrote:

The nightly shroud-waving and shocking close-ups of pain imposed on us by the TV news bewildered and terrified the population into eager compliance with lockdowns. We were invited to 'save the NHS' and to grieve for strangers – the real-life loved ones behind those shocking death counts. Why would the public imagine what I now fear, namely that the way Covid-19 death statistics are compiled might make the numbers seem greater than they are?

Oh, just a little bit – like 100 percent.

Do the maths

Mooney asked why a country would wish to skew its mortality figures by wrongly certifying deaths? What had been going on? Well, if you don't believe in conspiracies you will never find the answer which is that *it's a conspiracy*. She did, however, describe what she had discovered as a 'national scandal'. In reality it's a global scandal and happening everywhere. Pillars of this conspiracy were all put into place before the button was pressed with the Drosten PCR protocol and high amplifications to produce the cases and death certificate changes to secure illusory 'Covid' deaths. Mooney notes that normally two doctors were needed to certify a death, with one having to know the patient, and how the rules were changed in the spring of 2020 to allow one doctor to do this. In the same period 'Covid deaths' were decreed to be all cases where Covid-19 was put on the death certificate even without a positive test or any symptoms. Mooney asked: 'How many of the 30,851 (as of January 15) care home resident deaths with Covid-19 on the certificate (32.4 per cent of all deaths so far) were based on an assumption, like that of my father? And what has that done to our national psyche?'All of them is the answer to the first question and it has devastated and dismantled the national psyche, actually the global psyche, on a colossal scale. In the UK case and death data is compiled by organisations like Public Health England (PHE) and the Office for National Statistics (ONS). Mooney highlights the insane policy of counting a death from any cause as 'Covid-19' if this happens within 28 days of a positive test (with a test not testing for the 'virus') and she points out that ONS statistics reflect deaths 'involving Covid' 'or due to Covid' which meant in practice any

death where 'Covid-19' was mentioned on the death certificate. She described the consequences of this fraud:

Most people will accept the narrative they are fed, so panicky governments here and in Europe witnessed the harsh measures enacted in totalitarian China and jumped into lockdown. Headlines about Covid deaths tolled like the knell that would bring doomsday to us all. Fear stalked our empty streets. Politicians parroted the frankly ridiculous aim of 'zero Covid' and shut down the economy, while most British people agreed that lockdown was essential and (astonishingly to me, as a patriotic Brit) even wanted more restrictions.

For what? Lies on death certificates? Never mind the grim toll of lives ruined, suicides, schools closed, rising inequality, depression, cancelled hospital treatments, cancer patients in a torture of waiting, poverty, economic devastation, loneliness, families kept apart, and so on. How many lives have been lost as a direct result of lockdown?

She said that we could join in a national chorus of shock and horror at reaching the 120,000 death toll which was surely certain to have been totally skewed all along, but what about the human cost of lockdown justified by these 'death figures'? *The British Medical Journal* had reported a 1,493 percent increase in cases of children taken to Great Ormond Street Hospital with abusive head injuries alone and then there was the effect on families:

Perhaps the most shocking thing about all this is that families have been kept apart – and obeyed the most irrational, changing rules at the whim of government – because they believed in the statistics. They succumbed to fear, which his generation rejected in that war fought for freedom. Dad (God rest his soul) would be angry. And so am I.

Another theme to watch is that in the winter months when there are more deaths from all causes they focus on 'Covid' deaths and in the summer when the British Lung Foundation says respiratory disease plummets by 80 percent they rage on about 'cases'. Either way fascism on population is always the answer.

Nazi eugenics in the 21st century

Elderly people in care homes have been isolated from their families month after lonely month with no contact with relatives and grandchildren who were banned from seeing them. We were told

that lockdown fascism was to 'protect the vulnerable' like elderly people. At the same time Do Not Resuscitate (DNR) orders were placed on their medical files so that if they needed resuscitation it wasn't done and 'Covid-19' went on their death certificates. Old people were not being 'protected' they were being culled – murdered in truth. DNR orders were being decreed for disabled and young people with learning difficulties or psychological problems. The UK Care Quality Commission, a non-departmental body of the Department of Health and Social Care, found that 34 percent of those working in health and social care were pressured into placing 'do not attempt cardiopulmonary resuscitation' orders on 'Covid' patients who suffered from disabilities and learning difficulties without involving the patient or their families in the decision. UK judges ruled that an elderly woman with dementia should have the DNA-manipulating 'Covid vaccine' against her son's wishes and that a man with severe learning difficulties should have the jab despite his family's objections. Never mind that many had already died. The judiciary always supports doctors and government in fascist dictatorships. They wouldn't dare do otherwise. A horrific video was posted showing fascist officers from Los Angeles police forcibly giving the 'Covid' shot to women with special needs who were screaming that they didn't want it. The same fascists are seen giving the jab to a sleeping elderly woman in a care home. This is straight out of the Nazi playbook. Hitler's Nazis committed mass murder of the mentally ill and physically disabled throughout Germany and occupied territories in the programme that became known as Aktion T4, or just T4. Sabbatian-controlled Hitler and his grotesque crazies set out to kill those they considered useless and unnecessary. The Reich Committee for the Scientific Registering of Hereditary and Congenital Illnesses registered the births of babies identified by physicians to have 'defects'. By 1941 alone more than 5,000 children were murdered by the state and it is estimated that in total the number of innocent people killed in Aktion T4 was between 275,000 and 300,000. Parents were told their children had been sent away for 'special treatment' never to return. It is rather pathetic to see claims about plans for new extermination camps being dismissed today

when the same force behind current events did precisely that 80 years ago. Margaret Sanger was a Cult operative who used 'birth control' to sanitise her programme of eugenics. Organisations she founded became what is now Planned Parenthood. Sanger proposed that 'the whole dysgenic population would have its choice of segregation or sterilization'. These included epileptics, 'feeble-minded', and prostitutes. Sanger opposed charity because it perpetuated 'human waste'. She reveals the Cult mentality and if anyone thinks that extermination camps are a 'conspiracy theory' their naivety is touching if breathtakingly stupid.

If you don't believe that doctors can act with callous disregard for their patients it is worth considering that doctors and medical staff agreed to put government-decreed DNR orders on medical files and do nothing when resuscitation is called for. I don't know what you call such people in your house. In mine they are Nazis from the Josef Mengele School of Medicine. Phenomenal numbers of old people have died worldwide from the effects of lockdown, depression, lack of treatment, the 'vaccine' (more later) and losing the will to live. A common response at the start of the manufactured pandemic was to remove old people from hospital beds and transfer them to nursing homes. The decision would result in a mass cull of elderly people in those homes through lack of treatment – *not* 'Covid'. Care home whistleblowers have told how once the 'Covid' era began doctors would not come to their homes to treat patients and they were begging for drugs like antibiotics that often never came. The most infamous example was ordered by New York governor Andrew Cuomo, brother of a moronic CNN host, who amazingly was given an Emmy Award for his handling of the 'Covid crisis' by the ridiculous Wokers that hand them out. Just how ridiculous could be seen in February, 2021, when a Department of Justice and FBI investigation began into how thousands of old people in New York died in nursing homes after being discharged from hospital to make way for 'Covid' patients on Cuomo's say-so – and how he and his staff covered up these facts. This couldn't have happened to a nicer psychopath. Even then there was a 'Covid' spin. Reports said that

thousands of old people who tested positive for 'Covid' in hospital were transferred to nursing homes to both die of 'Covid' and transmit it to others. No – they were in hospital because they were ill and the fact that they tested positive with a test not testing for the 'virus' is irrelevant. They were ill often with respiratory diseases ubiquitous in old people near the end of their lives. Their transfer out of hospital meant that their treatment stopped and many would go on to die.

They're old. Who gives a damn?

I have exposed in the books for decades the Cult plan to cull the world's old people and even to introduce at some point what they call a 'demise pill' which at a certain age everyone would take and be out of here by law. In March, 2021, Spain legalised euthanasia and assisted suicide following the Netherlands, Belgium, Luxembourg and Canada on the Tiptoe to the demise pill. Treatment of old people by many 'care' homes has been a disgrace in the 'Covid' era. There are many, many, caring staff – I know some. There have, however, been legions of stories about callous treatment of old people and their families. Police were called when families came to take their loved ones home in the light of isolation that was killing them. They became prisoners of the state. Care home residents in insane, fascist Ontario, Canada, were not allowed to leave their *room* once the 'Covid' hoax began. UK staff have even wheeled elderly people away from windows where family members were talking with them. Oriana Criscuolo from Stockport in the English North West dropped off some things for her 80-year-old father who has Parkinson's disease and dementia and she wanted to wave to him through a ground-floor window. She was told that was 'illegal'. When she went anyway they closed the curtains in the middle of the day. Oriana said:

> It's just unbelievable. I cannot understand how care home staff – people who are being paid to care – have become so uncaring. Their behaviour is inhumane and cruel. It's beyond belief.

She was right and this was not a one-off. What a way to end your life in such loveless circumstances. UK registered nurse Nicky Millen, a proper old school nurse for 40 years, said that when she started her career care was based on dignity, choice, compassion and empathy. Now she said 'the things that are important to me have gone out of the window.' She was appalled that people were dying without their loved ones and saying goodbye on iPads. Nicky described how a distressed 89-year-old lady stroked her face and asked her 'how many paracetamol would it take to finish me off'. Life was no longer worth living while not seeing her family. Nicky said she was humiliated in front of the ward staff and patients for letting the lady stroke her face and giving her a cuddle. Such is the dehumanisation that the 'Covid' hoax has brought to the surface. Nicky worked in care homes where patients told her they were being held prisoner. 'I want to live until I die', one said to her. 'I had a lady in tears because she hadn't seen her great-grandson.' Nicky was compassionate old school meeting psychopathic New Normal. She also said she had worked on a 'Covid' ward with no 'Covid' patients. Jewish writer Shai Held wrote an article in March, 2020, which was headlined 'The Staggering, Heartless Cruelty Toward the Elderly'. What he described was happening from the earliest days of lockdown. He said 'the elderly' were considered a group and not unique individuals (the way of the Woke). Shai Held said:

Notice how the all-too-familiar rhetoric of dehumanization works: 'The elderly' are bunched together as a faceless mass, all of them considered culprits and thus effectively deserving of the suffering the pandemic will inflict upon them. Lost entirely is the fact that the elderly are individual human beings, each with a distinctive face and voice, each with hopes and dreams, memories and regrets, friendships and marriages, loves lost and loves sustained.

'The elderly' have become another dehumanised group for which anything goes and for many that has resulted in cold disregard for their rights and their life. The distinctive face that Held talks about is designed to be deleted by masks until everyone is part of a faceless mass.

‘War-zone’ hospitals myth

Again and again medical professionals have told me what was really going on and how hospitals ‘overrun like war zones’ according to the media were virtually empty. The mantra from medical whistleblowers was please don’t use my name or my career is over. Citizen journalists around the world sneaked into hospitals to film evidence exposing the ‘war-zone’ lie. They really *were* largely empty with closed wards and operating theatres. I met a hospital worker in my town on the Isle of Wight during the first lockdown in 2020 who said the only island hospital had never been so quiet. Lockdown was justified by the psychopaths to stop hospitals being overrun. At the same time that the island hospital was near-empty the military arrived here to provide *extra beds*. It was all propaganda to ramp up the fear to ensure compliance with fascism as were never-used temporary hospitals with thousands of beds known as Nightingales and never-used make-shift mortuaries opened by the criminal UK government. A man who helped to install those extra island beds attributed to the army said they were never used and the hospital was empty. Doctors and nurses ‘stood around talking or on their phones, wandering down to us to see what we were doing’. There were no masks or social distancing. He accused the useless local island paper, the *County Press*, of ‘pumping the fear as if our hospital was overrun and we only have one so it should have been’. He described ambulances parked up with crews outside in deck chairs. When his brother called an ambulance he was told there was a two-hour backlog which he called ‘bullshit’. An old lady on the island fell ‘and was in a bad way’, but a caller who rang for an ambulance was told the situation wasn’t urgent enough. Ambulance stations were working under capacity while people would hear ambulances with sirens blaring driving through the streets. When those living near the stations realised what was going on they would follow them as they left, circulated around an urban area with the sirens going, and then came back without stopping. All this was to increase levels of fear and the same goes for the ‘ventilator shortage crisis’ that cost tens of millions for hastily produced ventilators never to be used.

Ambulance crews that agreed to be exploited in this way for fear propaganda might find themselves a mirror. I wish them well with that. Empty hospitals were the obvious consequence of treatment and diagnoses of non-'Covid' conditions cancelled and those involved handed a death sentence. People have been dying at home from undiagnosed and untreated cancer, heart disease and other life-threatening conditions to allow empty hospitals to deal with a 'pandemic' that wasn't happening.

Death of the innocent

'War-zones' have been laying off nursing staff, even doctors where they can. There was no work for them. Lockdown was justified by saving lives and protecting the vulnerable they were actually killing with DNR orders and preventing empty hospitals being 'overrun'. In Britain the mantra of stay at home to 'save the NHS' was everywhere and across the world the same story was being sold when it was all lies. Two California doctors, Dan Erickson and Artin Massihi at Accelerated Urgent Care in Bakersfield, held a news conference in April, 2020, to say that intensive care units in California were 'empty, essentially', with hospitals shutting floors, not treating patients and laying off doctors. The California health system was working at minimum capacity 'getting rid of doctors because we just don't have the volume'. They said that people with conditions such as heart disease and cancer were not coming to hospital out of fear of 'Covid-19'. Their video was deleted by Susan Wojcicki's Cult-owned YouTube after reaching five million views. Florida governor Ron Desantis, who rejected the severe lockdowns of other states and is being targeted for doing so, said that in March, 2020, every US governor was given models claiming they would run out of hospital beds in days. That was never going to happen and the 'modellers' knew it. Deceit can be found at every level of the system. Urgent children's operations were cancelled including fracture repairs and biopsies to spot cancer. Eric Nicholls, a consultant paediatrician, said 'this is obviously concerning and we need to return to normal operating and to increase capacity as soon as possible'. Psychopaths

in power were rather less concerned *because* they are psychopaths. Deletion of urgent care and diagnosis has been happening all over the world and how many kids and others have died as a result of the actions of these cold and heartless lunatics dictating 'health' policy? The number must be stratospheric. Richard Sullivan, professor of cancer and global health at King's College London, said people feared 'Covid' more than cancer such was the campaign of fear. 'Years of lost life will be quite dramatic', Sullivan said, with 'a huge amount of avoidable mortality'. Sarah Woolnough, executive director for policy at Cancer Research UK, said there had been a 75 percent drop in urgent referrals to hospitals by family doctors of people with suspected cancer. Sullivan said that 'a lot of services have had to scale back – we've seen a dramatic decrease in the amount of elective cancer surgery'. Lockdown deaths worldwide has been absolutely fantastic with the *New York Post* reporting how data confirmed that 'lockdowns end more lives than they save':

> There was a sharp decline in visits to emergency rooms and an increase in fatal heart attacks because patients didn't receive prompt treatment. Many fewer people were screened for cancer. Social isolation contributed to excess deaths from dementia and Alzheimer's.
>
> Researchers predicted that the social and economic upheaval would lead to tens of thousands of "deaths of despair" from drug overdoses, alcoholism and suicide. As unemployment surged and mental-health and substance-abuse treatment programs were interrupted, the reported levels of anxiety, depression and suicidal thoughts increased dramatically, as did alcohol sales and fatal drug overdoses.

This has been happening while nurses and other staff had so much time on their hands in the 'war-zones' that Tic-Tok dancing videos began appearing across the Internet with medical staff dancing around in empty wards and corridors as people died at home from causes that would normally have been treated in hospital.

Mentions in dispatches

One brave and truth-committed whistleblower was Louise Hampton, a call handler with the UK NHS who made a viral Internet video saying she had done 'fuck all' during the 'pandemic'

which was 'a load of bollocks'. She said that 'Covid-19' was rebranded flu and of course she lost her job. This is what happens in the medical and endless other professions now when you tell the truth. Louise filmed inside 'war-zone' accident and emergency departments to show they were empty and I mean *empty* as in no one there. The mainstream media could have done the same and blown the gaff on the whole conspiracy. They haven't to their eternal shame. Not that most 'journalists' seem capable of manifesting shame as with the psychopaths they slavishly repeat without question. The relative few who were admitted with serious health problems were left to die alone with no loved ones allowed to see them because of 'Covid' rules and they included kids dying without the comfort of mum and dad at their bedside while the evil behind this couldn't give a damn. It was all good fun to them. A Scottish NHS staff nurse publicly quit in the spring of 2021 saying: 'I can no longer be part of the lies and the corruption by the government.' She said hospitals 'aren't full, the beds aren't full, beds have been shut, wards have been shut'. Hospitals were never busy throughout 'Covid'. The staff nurse said that Nicola Sturgeon, tragically the leader of the Scottish government, was on television saying save the hospitals and the NHS – 'but the beds are empty' and 'we've not seen flu, we always see flu every year'. She wrote to government and spoke with her union Unison (the unions are Cult-compromised and *useless*, but nothing changed. Many of her colleagues were scared of losing their jobs if they spoke out as they wanted to. She said nursing staff were being affected by wearing masks all day and 'my head is splitting every shift from wearing a mask'. The NHS is part of the fascist tyranny and must be dismantled so we can start again with human beings in charge. (Ironically, hospitals were reported to be busier again when official 'Covid' cases *fell* in spring/summer of 2021 and many other conditions required treatment at the same time as *the fake vaccine rollout*.)

I will cover the 'Covid vaccine' scam in detail later, but it is another indicator of the sickening disregard for human life that I am highlighting here. The DNA-manipulating concoctions do not fulfil

the definition of a 'vaccine', have never been used on humans before and were given only emergency approval because trials were not completed and they continued using the unknowing public. The result was what a NHS senior nurse with responsibility for 'vaccine' procedure said was 'genocide'. She said the 'vaccines' were not 'vaccines'. They had not been shown to be safe and claims about their effectiveness by drug companies were 'poetic licence'. She described what was happening as a 'horrid act of human annihilation'. The nurse said that management had instigated a policy of not providing a Patient Information Leaflet (PIL) before people were 'vaccinated' even though health care professionals are supposed to do this according to protocol. Patients should also be told that they are taking part in an ongoing clinical trial. Her challenges to what is happening had seen her excluded from meetings and ridiculed in others. She said she was told to 'watch my step … or I would find myself surplus to requirements'. The nurse, who spoke anonymously in fear of her career, said she asked her NHS manager why he/she was content with taking part in genocide against those having the 'vaccines'. The reply was that everyone had to play their part and to 'put up, shut up, and get it done'. Government was 'leaning heavily' on NHS management which was clearly leaning heavily on staff. This is how the global 'medical' hierarchy operates and it starts with the Cult and its World Health Organization.

She told the story of a doctor who had the Pfizer jab and when questioned had no idea what was in it. The doctor had never read the literature. We have to stop treating doctors as intellectual giants when so many are moral and medical pygmies. The doctor did not even know that the 'vaccines' were not fully approved or that their trials were ongoing. They were, however, asking their patients if they minded taking part in follow-ups for research purposes – yes, the *ongoing clinical trial*. The nurse said the doctor's ignorance was not rare and she had spoken to a hospital consultant who had the jab without any idea of the background or that the 'trials' had not been completed. Nurses and pharmacists had shown the same ignorance.

'My NHS colleagues have forsaken their duty of care, broken their code of conduct – Hippocratic Oath – and have been brainwashed just the same as the majority of the UK public through propaganda …' She said she had not been able to recruit a single NHS colleague, doctor, nurse or pharmacist to stand with her and speak out. Her union had refused to help. She said that if the genocide came to light she would not hesitate to give evidence at a Nuremberg-type trial against those in power who could have affected the outcomes but didn't.

And all for what?

To put the nonsense into perspective let's say the 'virus' does exist and let's go completely crazy and accept that the official manipulated figures for cases and deaths are accurate. *Even then* a study by Stanford University epidemiologist Dr John Ioannidis published on the World Health Organization website produced an average infection to fatality rate of … *0.23 percent!* Ioannidis said: 'If one could sample equally from all locations globally, the median infection fatality rate might even be substantially lower than the 0.23% observed in my analysis.' For healthy people under 70 it was … *0.05 percent*! This compares with the 3.4 percent claimed by the Cult-owned World Health Organization when the hoax was first played and maximum fear needed to be generated. An updated Stanford study in April, 2021, put the 'infection' to 'fatality' rate at just 0.15 percent. Another team of scientists led by Megan O'Driscoll and Henrik Salje studied data from 45 countries and published their findings on the Nature website. For children and young people the figure is so small it virtually does not register although authorities will be hyping dangers to the young when they introduce DNA-manipulating 'vaccines' for children. The O'Driscoll study produced an average infection-fatality figure of 0.003 for children from birth to four; 0.001 for 5 to 14; 0.003 for 15 to 19; and it was still only 0.456 up to 64. To claim that children must be 'vaccinated' to protect them from 'Covid' is an obvious lie and so there must be another reason and there is. What's more the average age of a 'Covid' death is akin

to the average age that people die in general. The average age of death in England is about 80 for men and 83 for women. The average age of death from alleged 'Covid' is between 82 and 83. California doctors, Dan Erickson and Artin Massihi, said at their April media conference that projection models of millions of deaths had been 'woefully inaccurate'. They produced detailed figures showing that Californians had a 0.03 chance of dying from 'Covid' based on the number of people who tested positive (with a test not testing for the 'virus'). Erickson said there was a 0.1 percent chance of dying from 'Covid' in the *state* of New York, not just the city, and a 0.05 percent chance in Spain, a centre of 'Covid-19' hysteria at one stage. The Stanford studies supported the doctors' data with fatality rate estimates of 0.23 and 0.15 percent. How close are these figures to my estimate of *zero*? Death-rate figures claimed by the World Health Organization at the start of the hoax were some 15 times higher. The California doctors said there was no justification for lockdowns and the economic devastation they caused. Everything they had ever learned about quarantine was that you quarantine the *sick* and not the healthy. They had never seen this before and it made no medical sense.

Why in the in the light of all this would governments and medical systems the world over say that billions must go under house arrest; lose their livelihood; in many cases lose their mind, their health and their life; force people to wear masks dangerous to health and psychology; make human interaction and even family interaction a criminal offence; ban travel; close restaurants, bars, watching live sport, concerts, theatre, and any activity involving human togetherness and discourse; and closing schools to isolate children from their friends and cause many to commit suicide in acts of hopelessness and despair? The California doctors said lockdown consequences included increased child abuse, partner abuse, alcoholism, depression, and other impacts they were seeing every day. Who would do that to the entire human race if not mentally-ill psychopaths of almost unimaginable extremes like Bill Gates? We must face the reality of what we are dealing with and come out of

denial. Fascism and tyranny are made possible only by the target population submitting and acquiescing to fascism and tyranny. The whole of human history shows that to be true. Most people naively and unquestioning believed what they were told about a 'deadly virus' and meekly and weakly submitted to house arrest. Those who didn't believe it – at least in total – still submitted in fear of the consequences of not doing so. For the rest who wouldn't submit draconian fines have been imposed, brutal policing by psychopaths *for* psychopaths, and condemnation from the meek and weak who condemn the Pushbackers on behalf of the very force that has them, too, in its gunsights. 'Pathetic' does not even begin to suffice. Britain's brainless 'Health' Secretary Matt Hancock warned anyone lying to border officials about returning from a list of 'hotspot' countries could face a jail sentence of up to ten years which is more than for racially-aggravated assault, incest and attempting to have sex with a child under 13. Hancock is a lunatic, but he has the state apparatus behind him in a Cult-led chain reaction and the same with UK 'Vaccine Minister' Nadhim Zahawi, a prominent member of the mega-Cult secret society, Le Cercle, which featured in my earlier books. The Cult enforces its will on governments and medical systems; government and medical systems enforce their will on business and police; business enforces its will on staff who enforce it on customers; police enforce the will of the Cult on the population and play their essential part in creating a world of fascist control that their own children and grandchildren will have to live in their entire lives. It is a hierarchical pyramid of imposition and acquiescence and, yes indeedy, of clinical insanity.

Does anyone bright enough to read this book have to ask what the answer is? I think not, but I will reveal it anyway in the fewest of syllables: Tell the psychos and their moronic lackeys to fuck off and let's get on with our lives. We are many – They are few.

CHAPTER SEVEN

War on your mind

One believes things because one has been conditioned to believe them
Aldous Huxley, *Brave New World*

I have described the 'Covid' hoax as a 'Psyop' and that is true in every sense and on every level in accordance with the definition of that term which is psychological warfare. Break down the 'Covid pandemic' to the foundation themes and it is psychological warfare on the human individual and collective mind.

The same can be said for the entire human belief system involving every subject you can imagine. Huxley was right in his contention that people believe what they are conditioned to believe and this comes from the repetition throughout their lives of the same falsehoods. They spew from government, corporations, media and endless streams of 'experts' telling you what the Cult wants you to believe and often believing it themselves (although *far* from always). 'Experts' are rewarded with 'prestigious' jobs and titles and as agents of perceptual programming with regular access to the media. The Cult has to control the narrative – control *information* – or they lose control of the vital, crucial, without-which-they-cannot-prevail public perception of reality. The foundation of that control today is the Internet made possible by the Defense Advanced Research Projects Agency (DARPA), the incredibly sinister technological arm of the Pentagon. The Internet is the result of military technology.

DARPA openly brags about establishing the Internet which has been a long-term project to lasso the minds of the global population. I have said for decades the plan is to control information to such an extreme that eventually no one would see or hear anything that the Cult does not approve. We are closing in on that end with ferocious censorship since the 'Covid' hoax began and in my case it started back in the 1990s in terms of books and speaking venues. I had to create my own publishing company in 1995 precisely because no one else would publish my books even then. I think they're all still running.

Cult Internet

To secure total control of information they needed the Internet in which pre-programmed algorithms can seek out 'unclean' content for deletion and even stop it being posted in the first place. The Cult had to dismantle print and non-Internet broadcast media to ensure the transfer of information to the appropriate-named 'Web' – a critical expression of the *Cult* web. We've seen the ever-quickening demise of traditional media and control of what is left by a tiny number of corporations operating worldwide. Independent journalism in the mainstream is already dead and never was that more obvious than since the turn of 2020. The Cult wants all information communicated via the Internet to globally censor and allow the plug to be pulled any time. Lockdowns and forced isolation has meant that communication between people has been through electronic means and no longer through face-to-face discourse and discussion. Cult psychopaths have targeted the bars, restaurants, sport, venues and meeting places in general for this reason. None of this is by chance and it's to stop people gathering in any kind of privacy or number while being able to track and monitor all Internet communications and block them as necessary. Even private messages between individuals have been censored by these fascists that control Cult fronts like Facebook, Twitter, Google and YouTube which are all officially run by Sabbatian place-people and from the background by higher-level Sabbatian place people.

Facebook, Google, Amazon and their like were seed-funded and supported into existence with money-no-object infusions of funds either directly or indirectly from DARPA and CIA technology arm In-Q-Tel. The Cult plays the long game and prepares very carefully for big plays like 'Covid'. Amazon is another front in the psychological war and pretty much controls the global market in book sales and increasingly publishing. Amazon's limitless funds have deleted fantastic numbers of independent publishers to seize global domination on the way to deciding which books can be sold and circulated and which cannot. Moves in that direction are already happening. Amazon's leading light Jeff Bezos is the grandson of Lawrence Preston Gise who worked with DARPA predecessor ARPA. Amazon has big connections to the CIA and the Pentagon. The plan I have long described went like this:

1. Employ military technology to establish the Internet.

2. Sell the Internet as a place where people can freely communicate without censorship and allow that to happen until the Net becomes the central and irreversible pillar of human society. If the Internet had been highly censored from the start many would have rejected it.

3. Fund and manipulate major corporations into being to control the circulation of information on your Internet using cover stories about geeks in garages to explain how they came about. Give them unlimited funds to expand rapidly with no need to make a profit for years while non-Cult companies who need to balance the books cannot compete. You know that in these circumstances your Googles, YouTubes, Facebooks and Amazons are going to secure near monopolies by either crushing or buying up the opposition.

4. Allow freedom of expression on both the Internet and communication platforms to draw people in until the Internet is the central and irreversible pillar of human society and your communication corporations have reached a stage of near monopoly domination.

5. Then unleash your always-planned frenzy of censorship on the basis of 'where else are you going to go?' and continue to expand that until nothing remains that the Cult does not want its human targets to see.

The process was timed to hit the 'Covid' hoax to ensure the best chance possible of controlling the narrative which they knew they had to do at all costs. They were, after all, about to unleash a 'deadly virus' that didn't really exist. If you do that in an environment of free-flowing information and opinion you would be dead in the

water before you could say Gates is a psychopath. The network was in place through which the Cult-created-and-owned World Health Organization could dictate the 'Covid' narrative and response policy slavishly supported by Cult-owned Internet communication giants and mainstream media while those telling a different story were censored. Google, YouTube, Facebook and Twitter openly announced that they would do this. What else would we expect from Cult-owned operations like Facebook which former executives have confirmed set out to make the platform more addictive than cigarettes and coldly manipulates emotions of its users to sow division between people and groups and scramble the minds of the young? If Zuckerberg lives out the rest of his life without going to jail for crimes against humanity, and most emphatically against the young, it will be a travesty of justice. Still, no matter, cause and effect will catch up with him eventually and the same with Sergey Brin and Larry Page at Google with its CEO Sundar Pichai who fix the Google search results to promote Cult narratives and hide the opposition. Put the same key words into Google and other search engines like DuckDuckGo and you will see how different results can be. Wikipedia is another intensely biased 'encyclopaedia' which skews its content to the Cult agenda. YouTube links to Wikipedia's version of 'Covid' and 'climate change' on video pages in which experts in their field offer a different opinion (even that is increasingly rare with Wojcicki censorship). Into this 'Covid' silence-them network must be added government media censors, sorry 'regulators', such as Ofcom in the UK which imposed tyrannical restrictions on British broadcasters that had the effect of banning me from ever appearing. Just to debate with me about my evidence and views on 'Covid' would mean breaking the fascistic impositions of Ofcom and its CEO career government bureaucrat Melanie Dawes. Gutless British broadcasters tremble at the very thought of fascist Ofcom.

Psychos behind 'Covid'

The reason for the 'Covid' catastrophe in all its facets and forms can be seen by whom and what is driving the policies worldwide in such a coordinated way. Decisions are not being made to protect health, but to target psychology. The dominant group guiding and 'advising' government policy are not medical professionals. They are psychologists and behavioural scientists. Every major country has its own version of this phenomenon and I'll use the British example to show how it works. In many ways the British version has been affecting the wider world in the form of the huge behaviour manipulation network in the UK which operates in other countries. The network involves private companies, government, intelligence and military. The Cabinet Office is at the centre of the government 'Covid' Psyop and part-owns, with 'innovation charity' Nesta, the Behavioural Insights Team (BIT) which claims to be independent of government but patently isn't. The BIT was established in 2010 and its job is to manipulate the psyche of the population to acquiesce to government demands and so much more. It is also known as the 'Nudge Unit', a name inspired by the 2009 book by two ultra-Zionists, Cass Sunstein and Richard Thaler, called *Nudge: Improving Decisions About Health, Wealth, and Happiness*. The book, as with the Behavioural Insights Team, seeks to 'nudge' behaviour (manipulate it) to make the public follow patterns of action and perception that suit those in authority (the Cult). Sunstein is so skilled at this that he advises the World Health Organization and the UK Behavioural Insights Team and was Administrator of the White House Office of Information and Regulatory Affairs in the Obama administration. Biden appointed him to the Department of Homeland Security – another ultra-Zionist in the fold to oversee new immigration laws which is another policy the Cult wants to control. Sunstein is desperate to silence anyone exposing conspiracies and co-authored a 2008 report on the subject in which suggestions were offered to ban 'conspiracy theorizing' or impose 'some kind of tax, financial or otherwise, on those who disseminate such theories'. I guess a psychiatrist's chair is out of the question?

Sunstein's mate Richard Thaler, an 'academic affiliate' of the UK Behavioural Insights Team, is a proponent of 'behavioural economics' which is defined as the study of 'the effects of psychological, cognitive, emotional, cultural and social factors on the decisions of individuals and institutions'. Study the effects so they can be manipulated to be what you want them to be. Other leading names in the development of behavioural economics are ultra-Zionists Daniel Kahneman and Robert J. Shiller and they, with Thaler, won the Nobel Memorial Prize in Economic Sciences for their work in this field. The Behavioural Insights Team is operating at the heart of the UK government and has expanded globally through partnerships with several universities including Harvard, Oxford, Cambridge, University College London (UCL) and Pennsylvania. They claim to have 'trained' (reframed) 20,000 civil servants and run more than 750 projects involving 400 randomised controlled trials in dozens of countries' as another version of mind reframers Common Purpose. BIT works from its office in New York with cities and their agencies, as well as other partners, across the United States and Canada – this is a company part-owned by the British government Cabinet Office. An executive order by President Cult-servant Obama established a US Social and Behavioral Sciences Team in 2015. They all have the same reason for being and that's to brainwash the population directly and by brainwashing those in positions of authority.

'Covid' mind game

Another prime aspect of the UK mind-control network is the 'independent' [joke] Scientific Pandemic Insights Group on Behaviours (SPI-B) which 'provides behavioural science advice aimed at anticipating and helping people adhere to interventions that are recommended by medical or epidemiological experts'. That means manipulating public perception and behaviour to do whatever government tells them to do. It's disgusting and if they really want the public to be 'safe' this lot should all be under lock and key. According to the government website SPI-B consists of

'behavioural scientists, health and social psychologists, anthropologists and historians' and advises the Whitty-Vallance-led Scientific Advisory Group for Emergencies (SAGE) which in turn advises the government on 'the science' (it doesn't) and 'Covid' policy. When politicians say they are being guided by 'the science' this is the rabble in each country they are talking about and that 'science' is dominated by behaviour manipulators to enforce government fascism through public compliance. The Behaviour Insight Team is headed by psychologist David Solomon Halpern, a visiting professor at King's College London, and connects with a national and global web of other civilian and military organisations as the Cult moves towards its goal of fusing them into one fascistic whole in every country through its 'Fusion Doctrine'. The behaviour manipulation network involves, but is not confined to, the Foreign Office; National Security Council; government communications headquarters (GCHQ); MI5; MI6; the Cabinet Office-based Media Monitoring Unit; and the Rapid Response Unit which 'monitors digital trends to spot emerging issues; including misinformation and disinformation; and identifies the best way to respond'.

There is also the 77th Brigade of the UK military which operates like the notorious Israeli military's Unit 8200 in manipulating information and discussion on the Internet by posing as members of the public to promote the narrative and discredit those who challenge it. Here we have the military seeking to manipulate *domestic* public opinion while the Nazis in government are fine with that. Conservative Member of Parliament Tobias Ellwood, an advocate of lockdown and control through 'vaccine passports', is a Lieutenant Colonel reservist in the 77th Brigade which connects with the military operation jHub, the 'innovation centre' for the Ministry of Defence and Strategic Command. jHub has also been involved with the civilian National Health Service (NHS) in 'symptom tracing' the population. The NHS is a key part of this mind control network and produced a document in December, 2020, explaining to staff how to use psychological manipulation with different groups and ages to get them to have the DNA-manipulating 'Covid vaccine'

that's designed to cumulatively rewrite human genetics. The document, called 'Optimising Vaccination Roll Out – Do's and Dont's for all messaging, documents and "communications" in the widest sense', was published by NHS England and the NHS Improvement *Behaviour Change Unit* in partnership with Public Health England and Warwick Business School. I hear the mantra about 'save the NHS' and 'protect the NHS' when we need to scrap the NHS and start again. The current version is far too corrupt, far too anti-human and totally compromised by Cult operatives and their assets. UK government broadcast media censor Ofcom will connect into this web – as will the BBC with its tremendous Ofcom influence – to control what the public see and hear and dictate mass perception. Nuremberg trials must include personnel from all these organisations.

The fear factor

The 'Covid' hoax has led to the creation of the UK Cabinet Office-connected Joint Biosecurity Centre (JBC) which is officially described as providing 'expert advice on pandemics' using its independent [all Cult operations are 'independent'] analytical function to provide real-time analysis about infection outbreaks to identify and respond to outbreaks of Covid-19'. Another role is to advise the government on a response to spikes in infections – 'for example by closing schools or workplaces in local areas where infection levels have risen'. Put another way, promoting the Cult agenda. The Joint Biosecurity Centre is modelled on the Joint Terrorism Analysis Centre which analyses intelligence to set 'terrorism threat levels' and here again you see the fusion of civilian and military operations and intelligence that has led to military intelligence producing documents about 'vaccine hesitancy' and how it can be combated. Domestic civilian matters and opinions should not be the business of the military. The Joint Biosecurity Centre is headed by Tom Hurd, director general of the Office for Security and Counter-Terrorism from the establishment-to-its-fingertips Hurd family. His father is former Foreign Secretary Douglas Hurd. How coincidental that Tom

Hurd went to the elite Eton College and Oxford University with Boris Johnson. Imperial College with its ridiculous computer modeller Neil Ferguson will connect with this gigantic web that will itself interconnect with similar set-ups in other major and not so major countries. Compared with this Cult network the politicians, be they Boris Johnson, Donald Trump or Joe Biden, are bit-part players 'following the science'. The network of psychologists was on the 'Covid' case from the start with the aim of generating maximum fear of the 'virus' to ensure compliance by the population. A government behavioural science group known as SPI-B produced a paper in March, 2020, for discussion by the main government science advisory group known as SAGE. It was headed 'Options for increasing adherence to social distancing measures' and it said the following in a section headed 'Persuasion':

- A substantial number of people still do not feel sufficiently personally threatened; it could be that they are reassured by the low death rate in their demographic group, although levels of concern may be rising. Having a good understanding of the risk has been found to be positively associated with adoption of COVID-19 social distancing measures in Hong Kong.

- The perceived level of personal threat needs to be increased among those who are complacent, using hard-hitting evaluation of options for increasing social distancing emotional messaging. To be effective this must also empower people by making clear the actions they can take to reduce the threat.

- Responsibility to others: There seems to be insufficient understanding of, or feelings of responsibility about, people's role in transmitting the infection to others … Messaging about actions need to be framed positively in terms of protecting oneself and the community, and increase confidence that they will be effective.

- Some people will be more persuaded by appeals to play by the rules, some by duty to the community, and some to personal risk.

> All these different approaches are needed. The messaging also needs to take account of the realities of different people's lives. Messaging needs to take account of the different motivational levers and circumstances of different people.

All this could be achieved the SPI-B psychologists said by *using the media to increase the sense of personal threat* which translates as terrify the shit out of the population, including children, so they all do what we want. That's not happened has it? Those excuses for 'journalists' who wouldn't know journalism if it bit them on the arse (the great majority) have played their crucial part in serving this Cult-government Psyop to enslave their own kids and grandkids. How they live with themselves I have no idea. The psychological war has been underpinned by constant government 'Covid' propaganda in almost every television and radio ad break, plus the Internet and print media, which has pounded out the fear with taxpayers footing the bill for their own programming. The result has been people terrified of a 'virus' that doesn't exist or one with a tiny fatality rate even if you believe it does. People walk down the street and around the shops wearing face-nappies damaging their health and psychology while others report those who refuse to be that naïve to the police who turn up in their own face-nappies. I had a cameraman come to my flat and he was so frightened of 'Covid' he came in wearing a mask and refused to shake my hand in case he caught something. He had – naïveitis – and the thought that he worked in the mainstream media was both depressing and made his behaviour perfectly explainable. The fear which has gripped the minds of so many and frozen them into compliance has been carefully cultivated by these psychologists who are really psychopaths. If lives get destroyed and a lot of young people commit suicide it shows our plan is working. SPI-B then turned to compulsion on the public to comply. 'With adequate preparation, rapid change can be achieved', it said. Some countries had introduced mandatory self-isolation on a wide scale without evidence of major public unrest and a large majority of the UK's population appeared to be supportive of more coercive measures with 64 percent of adults saying they would

support putting London under a lockdown (watch the 'polls' which are designed to make people believe that public opinion is in favour or against whatever the subject in hand).

For 'aggressive protective measures' to be effective, the SPI-B paper said, special attention should be devoted to those population groups that are more at risk. Translated from the Orwellian this means making the rest of population feel guilty for not protecting the 'vulnerable' such as old people which the Cult and its agencies were about to kill on an industrial scale with lockdown, lack of treatment and the Gates 'vaccine'. Psychopath psychologists sold their guilt-trip so comprehensively that Los Angeles County Supervisor Hilda Solis reported that children were apologising (from a distance) to their parents and grandparents for bringing 'Covid' into their homes and getting them sick. '… These apologies are just some of the last words that loved ones will ever hear as they die alone,' she said. Gut-wrenchingly Solis then used this childhood tragedy to tell children to stay at home and 'keep your loved ones alive'. Imagine heaping such potentially life-long guilt on a kid when it has absolutely nothing to do with them. These people are deeply disturbed and the psychologists behind this even more so.

Uncivil war – divide and rule

Professional mind-controllers at SPI-B wanted the media to increase a sense of responsibility to others (do as you're told) and promote 'positive messaging' for those actions while in contrast to invoke 'social disapproval' by the unquestioning, obedient, community of anyone with a mind of their own. Again the compliant Goebbels-like media obliged. This is an old, old, trick employed by tyrannies the world over throughout human history. You get the target population to keep the target population in line – *your* line. SPI-B said this could 'play an important role in preventing anti-social behaviour or discouraging failure to enact pro-social behaviour'. For 'anti-social' in the Orwellian parlance of SPI-B see any behaviour that government doesn't approve. SPI-B recommendations said that 'social disapproval' should be accompanied by clear messaging and

promotion of strong collective identity – hence the government and celebrity mantra of 'we're all in this together'. Sure we are. The mind doctors have such contempt for their targets that they think some clueless comedian, actor or singer telling them to do what the government wants will be enough to win them over. We have had UK comedian Lenny Henry, actor Michael Caine and singer Elton John wheeled out to serve the propagandists by urging people to have the DNA-manipulating 'Covid' non-'vaccine'. The role of Henry and fellow black celebrities in seeking to coax a 'vaccine' reluctant black community into doing the government's will was especially stomach-turning. An emotion-manipulating script and carefully edited video featuring these black 'celebs' was such an insult to the intelligence of black people and where's the self-respect of those involved selling their souls to a fascist government agenda? Henry said he heard black people's 'legitimate worries and concerns', but people must 'trust the facts' when they were doing exactly that by not having the 'vaccine'. They had to include the obligatory reference to Black Lives Matter with the line … 'Don't let coronavirus cost even more black lives – because we matter'. My god, it was pathetic. 'I know the vaccine is safe and what it does.' How? 'I'm a comedian and it says so in my script.'

SPI-B said social disapproval needed to be carefully managed to avoid victimisation, scapegoating and misdirected criticism, but they knew that their 'recommendations' would lead to exactly that and the media were specifically used to stir-up the divide-and-conquer hostility. Those who conform like good little baa, baas, are praised while those who have seen through the tidal wave of lies are 'Covidiots'. The awake have been abused by the fast asleep for not conforming to fascism and impositions that the awake know are designed to endanger their health, dehumanise them, and tear asunder the very fabric of human society. We have had the curtain-twitchers and morons reporting neighbours and others to the face-nappied police for breaking 'Covid rules' with fascist police delighting in posting links and phone numbers where this could be done. The Cult cannot impose its will without a compliant police

and military or a compliant population willing to play their part in enslaving themselves and their kids. The words of a pastor in Nazi Germany are so appropriate today:

First they came for the socialists and I did not speak out because I was not a socialist.

Then they came for the trade unionists and I did not speak out because I was not a trade unionist.

Then they came for the Jews and I did not speak out because I was not a Jew.

Then they came for me and there was no one left to speak for me.

Those who don't learn from history are destined to repeat it and so many are.

'Covid' rules: Rewiring the mind

With the background laid out to this gigantic national and global web of psychological manipulation we can put 'Covid' rules into a clear and sinister perspective. Forget the claims about protecting health. 'Covid' rules are about dismantling the human mind, breaking the human spirit, destroying self-respect, and then putting Humpty Dumpty together again as a servile, submissive slave. Social isolation through lockdown and distancing have devastating effects on the human psyche as the psychological psychopaths well know and that's the real reason for them. Humans need contact with each other, discourse, closeness and touch, or they eventually, and literarily, go crazy. Masks, which I will address at some length, fundamentally add to the effects of isolation and the Cult agenda to dehumanise and de-individualise the population. To do this while knowing – in fact *seeking* – this outcome is the very epitome of evil and psychologists involved in this *are* the epitome of evil. They must like all the rest of the Cult demons and their assets stand trial for crimes against humanity on a scale that defies the imagination. Psychopaths in uniform use isolation to break enemy troops and agents and make them subservient and submissive to tell what they know. The technique is rightly considered a form of torture and

torture is most certainly what has been imposed on the human population.

Clinically-insane American psychologist Harry Harlow became famous for his isolation experiments in the 1950s in which he separated baby monkeys from their mothers and imprisoned them for months on end in a metal container or 'pit of despair'. They soon began to show mental distress and depression as any idiot could have predicted. Harlow put other monkeys in steel chambers for three, six or twelve months while denying them any contact with animals or humans. He said that the effects of total social isolation for six months were 'so devastating and debilitating that we had assumed initially that twelve months of isolation would not produce any additional decrement'; but twelve months of isolation 'almost obliterated the animals socially'. This is what the Cult and its psychopaths are doing to you and your children. Even monkeys in partial isolation in which they were not allowed to form relationships with other monkeys became 'aggressive and hostile, not only to others, but also towards their own bodies'. We have seen this in the young as a consequence of lockdown. UK government psychopaths launched a public relations campaign telling people not to hug each other even after they received the 'Covid-19 vaccine' which we were told with more lies would allow a return to 'normal life'. A government source told *The Telegraph*: 'It will be along the lines that it is great that you have been vaccinated, but if you are going to visit your family and hug your grandchildren there is a chance you are going to infect people you love.' The source was apparently speaking from a secure psychiatric facility. Janet Lord, director of Birmingham University's Institute of Inflammation and Ageing, said that parents and grandparents should avoid hugging their children. Well, how can I put it, Ms Lord? Fuck off. Yep, that'll do.

Destroying the kids – where are the parents?

Observe what has happened to people enslaved and isolated by lockdown as suicide and self-harm has soared worldwide,

particularly among the young denied the freedom to associate with their friends. A study of 49,000 people in English-speaking countries concluded that almost half of young adults are at clinical risk of mental health disorders. A national survey in America of 1,000 currently enrolled high school and college students found that 5 percent reported attempting suicide during the pandemic. Data from the US CDC's National Syndromic Surveillance Program from January 1st to October 17th, 2020, revealed a *31 percent* increase in mental health issues among adolescents aged 12 to 17 compared with 2019. The CDC reported that America in general suffered the biggest drop in life expectancy since World War Two as it fell by a year in the first half of 2020 as a result of 'deaths of despair' – overdoses and suicides. Deaths of despair have leapt by more than 20 percent during lockdown and include the highest number of fatal overdoses ever recorded in a single year – 81,000. Internet addiction is another consequence of being isolated at home which lowers interest in physical activities as kids fall into inertia and what's the point? Children and young people are losing hope and giving up on life, sometimes literally. A 14-year-old boy killed himself in Maryland because he had 'given up' when his school district didn't reopen; an 11-year-old boy shot himself during a zoom class; a teenager in Maine succumbed to the isolation of the 'pandemic' when he ended his life after experiencing a disrupted senior year at school. Children as young as nine have taken their life and all these stories can be repeated around the world. Careers are being destroyed before they start and that includes those in sport in which promising youngsters have not been able to take part. The plan of the psycho-psychologists is working all right. Researchers at Cambridge University found that lockdowns cause significant harm to children's mental health. Their study was published in the *Archives of Disease in Childhood*, and followed 168 children aged between 7 and 11. The researchers concluded:

> During the UK lockdown, children's depression symptoms have increased substantially, relative to before lockdown. The scale of this effect has direct relevance for the continuation of different elements of lockdown policy, such as complete or partial school closures …

… Specifically, we observed a statistically significant increase in ratings of depression, with a medium-to-large effect size. Our findings emphasise the need to incorporate the potential impact of lockdown on child mental health in planning the ongoing response to the global pandemic and the recovery from it.

Not a chance when the Cult's psycho-psychologists were getting exactly what they wanted. The UK's Royal College of Paediatrics and Child Health has urged parents to look for signs of eating disorders in children and young people after a three to four fold increase. Specialists say the 'pandemic' is a major reason behind the rise. You don't say. The College said isolation from friends during school closures, exam cancellations, loss of extra-curricular activities like sport, and an increased use of social media were all contributory factors along with fears about the virus (psycho-psychologists again), family finances, and students being forced to quarantine. Doctors said young people were becoming severely ill by the time they were seen with 'Covid' regulations reducing face-to-face consultations. Nor is it only the young that have been devastated by the psychopaths. Like all bullies and cowards the Cult is targeting the young, elderly, weak and infirm. A typical story was told by a British lady called Lynn Parker who was not allowed to visit her husband in 2020 for the last ten and half months of his life 'when he needed me most' between March 20th and when he died on December 19th. This vacates the criminal and enters the territory of evil. The emotional impact on the immune system alone is immense as are the number of people of all ages worldwide who have died as a result of Cult-demanded, Gates-demanded, lockdowns.

Isolation is torture

The experience of imposing solitary confinement on millions of prisoners around the world has shown how a large percentage become 'actively psychotic and/or acutely suicidal'. Social isolation has been found to trigger 'a specific psychiatric syndrome, characterized by hallucinations; panic attacks; overt paranoia; diminished impulse control; hypersensitivity to external stimuli; and difficulties with thinking, concentration and memory'. Juan Mendez,

a United Nations rapporteur (investigator), said that isolation is a form of torture. Research has shown that even after isolation prisoners find it far more difficult to make social connections and I remember chatting to a shop assistant after one lockdown who told me that when her young son met another child again he had no idea how to act or what to do. Hannah Flanagan, Director of Emergency Services at Journey Mental Health Center in Dane County, Wisconsin, said: 'The specificity about Covid social distancing and isolation that we've come across as contributing factors to the suicides are really new to us this year.' But they are not new to those that devised them. They are getting the effect they want as the population is psychologically dismantled to be rebuilt in a totally different way. Children and the young are particularly targeted. They will be the adults when the full-on fascist AI-controlled technocracy is planned to be imposed and they are being prepared to meekly submit. At the same time older people who still have a memory of what life was like before – and how fascist the new normal really is – are being deleted. You are going to see efforts to turn the young against the old to support this geriatric genocide. Hannah Flanagan said the big increase in suicide in her county proved that social isolation is not only harmful, but deadly. Studies have shown that isolation from others is one of the main risk factors in suicide and even more so with women. Warnings that lockdown could create a 'perfect storm' for suicide were ignored. After all this was one of the *reasons* for lockdown. Suicide, however, is only the most extreme of isolation consequences. There are many others. Dr Dhruv Khullar, assistant professor of healthcare policy at Weill Cornell Medical College, said in a *New York Times* article in 2016 long before the fake 'pandemic':

> A wave of new research suggests social separation is bad for us. Individuals with less social connection have disrupted sleep patterns, altered immune systems, more inflammation and higher levels of stress hormones. One recent study found that isolation increases the risk of heart disease by 29 percent and stroke by 32 percent. Another analysis that pooled data from 70 studies and 3.4 million people found that socially isolated individuals had a 30 percent higher risk of dying in the next seven years, and that this effect was largest in middle age.

Loneliness can accelerate cognitive decline in older adults, and isolated individuals are twice as likely to die prematurely as those with more robust social interactions. These effects start early: Socially isolated children have significantly poorer health 20 years later, even after controlling for other factors. All told, loneliness is as important a risk factor for early death as obesity and smoking.

There you have proof from that one article alone four years before 2020 that those who have enforced lockdown, social distancing and isolation knew what the effect would be and that is even more so with professional psychologists that have been driving the policy across the globe. We can go back even further to the years 2000 and 2003 and the start of a major study on the effects of isolation on health by Dr Janine Gronewold and Professor Dirk M. Hermann at the University Hospital in Essen, Germany, who analysed data on 4,316 people with an average age of 59 who were recruited for the long-term research project. They found that socially isolated people are more than 40 percent more likely to have a heart attack, stroke, or other major cardiovascular event and nearly 50 percent more likely to die from any cause. Given the financial Armageddon unleashed by lockdown we should note that the study found a relationship between increased cardiovascular risk and lack of financial support. After excluding other factors social isolation was still connected to a 44 percent increased risk of cardiovascular problems and a 47 percent increased risk of death by any cause. Lack of financial support was associated with a 30 percent increase in the risk of cardiovascular health events. Dr Gronewold said it had been known for some time that feeling lonely or lacking contact with close friends and family can have an impact on physical health and the study had shown that having strong social relationships is of high importance for heart health. Gronewold said they didn't understand yet why people who are socially isolated have such poor health outcomes, but this was obviously a worrying finding, particularly during these times of prolonged social distancing. Well, it can be explained on many levels. You only have to identify the point in the body where people feel loneliness and missing people they are parted from – it's in the centre of the chest where they feel the ache of loneliness and the ache of missing people. 'My heart aches for

you' … 'My heart aches for some company.' I will explain this more in the chapter Escaping Wetiko, but when you realise that the body is the mind – they are expressions of each other – the reason why state of the mind dictates state of the body becomes clear.

American psychologist Ranjit Powar was highlighting the effects of lockdown isolation as early as April, 2020. She said humans have evolved to be social creatures and are wired to live in interactive groups. Being isolated from family, friends and colleagues could be unbalancing and traumatic for most people and could result in short or even long-term psychological and physical health problems. An increase in levels of anxiety, aggression, depression, forgetfulness and hallucinations were possible psychological effects of isolation. 'Mental conditions may be precipitated for those with underlying pre-existing susceptibilities and show up in many others without any pre-condition.' Powar said personal relationships helped us cope with stress and if we lost this outlet for letting off steam the result can be a big emotional void which, for an average person, was difficult to deal with. 'Just a few days of isolation can cause increased levels of anxiety and depression' – so what the hell has been the effect on the global population of *18 months* of this at the time of writing? Powar said: 'Add to it the looming threat of a dreadful disease being repeatedly hammered in through the media and you have a recipe for many shades of mental and physical distress.' For those with a house and a garden it is easy to forget that billions have had to endure lockdown isolation in tiny overcrowded flats and apartments with nowhere to go outside. The psychological and physical consequences of this are unimaginable and with lunatic and abusive partners and parents the consequences have led to tremendous increases in domestic and child abuse and alcoholism as people seek to shut out the horror. Ranjit Powar said:

Staying in a confined space with family is not all a rosy picture for everyone. It can be extremely oppressive and claustrophobic for large low-income families huddled together in small single-room houses. Children here are not lucky enough to have many board/electronic games or books to keep them occupied.

Add to it the deep insecurity of running out of funds for food and basic necessities. On the other hand, there are people with dysfunctional family dynamics, such as domineering, abusive or alcoholic partners, siblings or parents which makes staying home a period of trial. Incidence of suicide and physical abuse against women has shown a worldwide increase. Heightened anxiety and depression also affect a person's immune system, making them more susceptible to illness.

To think that Powar's article was published on April 11th, 2020.

Six-feet fantasy

Social (unsocial) distancing demanded that people stay six feet or two metres apart. UK government advisor Robert Dingwall from the New and Emerging Respiratory Virus Threats Advisory Group said in a radio interview that the two-metre rule was 'conjured up out of nowhere' and was not based on science. No, it was not based on *medical* science, but it didn't come out of nowhere. The distance related to *psychological* science. Six feet/two metres was adopted in many countries and we were told by people like the criminal Anthony Fauci and his ilk that it was founded on science. Many schools could not reopen because they did not have the space for six-feet distancing. Then in March, 2021, after a year of six-feet 'science', a study published in the *Journal of Infectious Diseases* involving more than 500,000 students and almost 100,000 staff over 16 weeks revealed no significant difference in 'Covid' cases between six feet and three feet and Fauci changed his tune. Now three feet was okay. There is no difference between six feet and three *inches* when there is no 'virus' and they got away with six feet for psychological reasons for as long as they could. I hear journalists and others talk about 'unintended consequences' of lockdown. They are not *unintended* at all; they have been coldly-calculated for a specific outcome of human control and that's why super-psychopaths like Gates have called for them so vehemently. Super-psychopath psychologists have demanded them and psychopathic or clueless, spineless, politicians have gone along with them by 'following the science'. But it's not science at all. 'Science' is not what is; it's only what people can be manipulated to believe it is. The whole 'Covid' catastrophe is

founded on mind control. Three word or three statement mantras issued by the UK government are a well-known mind control technique and so we've had 'Stay home/protect the NHS/save lives', 'Stay alert/control the virus/save lives' and 'hands/face/space'. One of the most vocal proponents of extreme 'Covid' rules in the UK has been Professor Susan Michie, a member of the British Communist Party, who is not a medical professional. Michie is the director of the Centre for Behaviour Change at University College London. She is a *behavioural psychologist* and another filthy rich 'Marxist' who praised China's draconian lockdown. She was known by fellow students at Oxford University as 'Stalin's nanny' for her extreme Marxism. Michie is an influential member of the UK government's Scientific Advisory Group for Emergencies (SAGE) and behavioural manipulation groups which have dominated 'Covid' policy. She is a consultant adviser to the World Health Organization on 'Covid-19' and behaviour. Why the hell are lockdowns anything to do with her when they are claimed to be about health? Why does a behavioural psychologist from a group charged with changing the behaviour of the public want lockdown, human isolation and mandatory masks? Does that question really need an answer? Michie *absolutely* has to explain herself before a Nuremberg court when humanity takes back its world again and even more so when you see the consequences of masks that she demands are compulsory. This is a Michie classic:

> The benefits of getting primary school children to wear masks is that regardless of what little degree of transmission is occurring in those age groups it could help normalise the practice. Young children wearing masks may be more likely to get their families to accept masks.

Those words alone should carry a prison sentence when you ponder on the callous disregard for children involved and what a statement it makes about the mind and motivations of Susan Michie. What a lovely lady and what she said there encapsulates the mentality of the psychopaths behind the 'Covid' horror. Let us compare what Michie said with a countrywide study in Germany published at researchsquare.com involving 25,000 school children and 17,854 health complaints submitted by parents. Researchers

found that masks are harming children physically, psychologically, and behaviourally with 24 health issues associated with mask wearing. They include: shortness of breath (29.7%); dizziness (26.4%); increased headaches (53%); difficulty concentrating (50%); drowsiness or fatigue (37%); and malaise (42%). Nearly a third of children experienced more sleep issues than before and a quarter developed new fears. Researchers found health issues and other impairments in 68 percent of masked children covering their faces for an average of 4.5 hours a day. Hundreds of those taking part experienced accelerated respiration, tightness in the chest, weakness, and short-term impairment of consciousness. A reminder of what Michie said again:

The benefits of getting primary school children to wear masks is that regardless of what little degree of transmission is occurring in those age groups it could help normalise the practice. Young children wearing masks may be more likely to get their families to accept masks.

Psychopaths in government and psychology now have children and young people – plus all the adults – wearing masks for hours on end while clueless teachers impose the will of the psychopaths on the young they should be protecting. What the hell are parents doing?

Cult lab rats

We have some schools already imposing on students microchipped buzzers that activate when they get 'too close' to their pals in the way they do with lab rats. How apt. To the Cult and its brain-dead servants our children *are* lab rats being conditioned to be unquestioning, dehumanised slaves for the rest of their lives. Children and young people are being weaned and frightened away from the most natural human instincts including closeness and touch. I have tracked in the books over the years how schools were banning pupils from greeting each other with a hug and the whole Cult-induced Me Too movement has terrified men and boys from a relaxed and natural interaction with female friends and work colleagues to the point where many men try never to be in a room

alone with a woman that's not their partner. Airhead celebrities have as always played their virtue-signalling part in making this happen with their gross exaggeration. For every monster like Harvey Weinstein there are at least tens of thousands of men that don't treat women like that; but everyone must be branded the same and policy changed for them as well as the monster. I am going to be using the word 'dehumanise' many times in this chapter because that is what the Cult is seeking to do and it goes very deep as we shall see. Don't let them kid you that social distancing is planned to end one day. That's not the idea. We are seeing more governments and companies funding and producing wearable gadgets to keep people apart and they would not be doing that if this was meant to be short-term. A tech start-up company backed by GCHQ, the British Intelligence and military surveillance headquarters, has created a social distancing wrist sensor that alerts people when they get too close to others. The CIA has also supported tech companies developing similar devices. The wearable sensor was developed by Tended, one of a number of start-up companies supported by GCHQ (see the CIA and DARPA). The device can be worn on the wrist or as a tag on the waistband and will vibrate whenever someone wearing the device breaches social distancing and gets anywhere near natural human contact. The company had a lucky break in that it was developing a distancing sensor when the 'Covid' hoax arrived which immediately provided a potentially enormous market. How fortunate. The government in big-time Cult-controlled Ontario in Canada is investing $2.5 million in wearable contact tracing technology that 'will alert users if they may have been exposed to the Covid-19 in the workplace and will beep or vibrate if they are within six feet of another person'. Facedrive Inc., the technology company behind this, was founded in 2016 with funding from the Ontario Together Fund and obviously they, too, had a prophet on the board of directors. The human surveillance and control technology is called TraceSCAN and would be worn by the human cyborgs in places such as airports, workplaces, construction sites, care homes and … *schools*.

I emphasise schools with children and young people the prime targets. You know what is planned for society as a whole if you keep your eyes on the schools. They have always been places where the state program the next generation of slaves to be its compliant worker-ants – or Woker-ants these days; but in the mist of the 'Covid' madness they have been transformed into mind laboratories on a scale never seen before. Teachers and head teachers are just as programmed as the kids – often more so. Children are kept apart from human interaction by walk lanes, classroom distancing, staggered meal times, masks, and the rolling-out of buzzer systems. Schools are now physically laid out as a laboratory maze for lab-rats. Lunatics at a school in Anchorage, Alaska, who should be prosecuted for child abuse, took away desks and forced children to kneel (know your place) on a mat for five hours a day while wearing a mask and using their chairs as a desk. How this was supposed to impact on a 'virus' only these clinically insane people can tell you and even then it would be clap-trap. The school banned recess (interaction), art classes (creativity), and physical exercise (getting body and mind moving out of inertia). Everyone behind this outrage should be in jail or better still a mental institution. The behavioural manipulators are all for this dystopian approach to schools. Professor Susan Michie, the mind-doctor and British Communist Party member, said it was wrong to say that schools were safe. They had to be made so by 'distancing', masks and ventilation (sitting all day in the cold). I must ask this lady round for dinner on a night I know I am going to be out and not back for weeks. She probably wouldn't be able to make it, anyway, with all the visits to her own psychologist she must have block-booked.

Masking identity

I know how shocking it must be for you that a behaviour manipulator like Michie wants everyone to wear masks which have long been a feature of mind-control programs like the infamous MKUltra in the United States, but, there we are. We live and learn. I spent many years from 1996 to right across the millennium

researching mind control in detail on both sides of the Atlantic and elsewhere. I met a large number of mind-control survivors and many had been held captive in body and mind by MKUltra. MK stands for mind-control, but employs the German spelling in deference to the Nazis spirited out of Germany at the end of World War Two by Operation Paperclip in which the US authorities, with help from the Vatican, transported Nazi mind-controllers and engineers to America to continue their work. Many of them were behind the creation of NASA and they included Nazi scientist and SS officer Wernher von Braun who swapped designing V-2 rockets to bombard London with designing the Saturn V rockets that powered the NASA moon programme's Apollo craft. I think I may have mentioned that the Cult has no borders. Among Paperclip escapees was Josef Mengele, the Angel of Death in the Nazi concentration camps where he conducted mind and genetic experiments on children often using twins to provide a control twin to measure the impact of his 'work' on the other. If you want to observe the Cult mentality in all its extremes of evil then look into the life of Mengele. I have met many people who suffered mercilessly under Mengele in the United States where he operated under the name Dr Greene and became a stalwart of MKUltra programming and torture. Among his locations was the underground facility in the Mojave Desert in California called the China Lake Naval Weapons Station which is almost entirely below the surface. My books *The Biggest Secret*, *Children of the Matrix* and *The Perception Deception* have the detailed background to MKUltra.

The best-known MKUltra survivor is American Cathy O'Brien. I first met her and her late partner Mark Phillips at a conference in Colorado in 1996. Mark helped her escape and deprogram from decades of captivity in an offshoot of MKUltra known as Project Monarch in which 'sex slaves' were provided for the rich and famous including Father George Bush, Dick Cheney and the Clintons. Read Cathy and Mark's book *Trance-Formation of America* and if you are new to this you will be shocked to the core. I read it in 1996 shortly before, with the usual synchronicity of my life, I found

myself given a book table at the conference right next to hers. MKUltra never ended despite being very publicly exposed (only a small part of it) in the 1970s and continues in other guises. I am still in touch with Cathy. She contacted me during 2020 after masks became compulsory in many countries to tell me how they were used as part of MKUltra programming. I had been observing 'Covid regulations' and the relationship between authority and public for months. I saw techniques that I knew were employed on individuals in MKUltra being used on the global population. I had read many books and manuals on mind control including one called *Silent Weapons for Quiet Wars* which came to light in the 1980s and was a guide on how to perceptually program on a mass scale. 'Silent Weapons' refers to mind-control. I remembered a line from the manual as governments, medical authorities and law enforcement agencies have so obviously talked to – or rather at – the adult population since the 'Covid' hoax began as if they are children. The document said:

> If a person is spoken to by a T.V. advertiser as if he were a twelve-year-old, then, due to suggestibility, he will, with a certain probability, respond or react to that suggestion with the uncritical response of a twelve-year-old and will reach in to his economic reservoir and deliver its energy to buy that product on impulse when he passes it in the store.

That's why authority has spoken to adults like children since all this began.

Why did Michael Jackson wear masks?

Every aspect of the 'Covid' narrative has mind-control as its central theme. Cathy O'Brien wrote an article for davidicke.com about the connection between masks and mind control. Her daughter Kelly who I first met in the 1990s was born while Cathy was still held captive in MKUltra. Kelly was forced to wear a mask as part of her programming from the age of *two* to dehumanise her, target her sense of individuality and reduce the amount of oxygen her brain and body received. *Bingo*. This is the real reason for compulsory

masks, why they have been enforced en masse, and why they seek to increase the number they demand you wear. First one, then two, with one disgraceful alleged 'doctor' recommending four which is nothing less than a death sentence. Where and how often they must be worn is being expanded for the purpose of mass mind control and damaging respiratory health which they can call 'Covid-19'. Canada's government headed by the man-child Justin Trudeau, says it's fine for children of two and older to wear masks. An insane 'study' in Italy involving just 47 children concluded there was no problem for babies as young as *four months* wearing them. Even after people were 'vaccinated' they were still told to wear masks by the criminal that is Anthony Fauci. Cathy wrote that mandating masks is allowing the authorities literally to control the air we breathe which is what was done in MKUltra. You might recall how the singer Michael Jackson wore masks and there is a reason for that. He was subjected to MKUltra mind control through Project Monarch and his psyche was scrambled by these simpletons. Cathy wrote:

In MKUltra Project Monarch mind control, Michael Jackson had to wear a mask to silence his voice so he could not reach out for help. Remember how he developed that whisper voice when he wasn't singing? Masks control the mind from the outside in, like the redefining of words is doing. By controlling what we can and cannot say for fear of being labeled racist or beaten, for example, it ultimately controls thought that drives our words and ultimately actions (or lack thereof).

Likewise, a mask muffles our speech so that we are not heard, which controls voice … words … mind. This is Mind Control. Masks are an obvious mind control device, and I am disturbed so many people are complying on a global scale. Masks depersonalize while making a person feel as though they have no voice. It is a barrier to others. People who would never choose to comply but are forced to wear a mask in order to keep their job, and ultimately their family fed, are compromised. They often feel shame and are subdued. People have stopped talking with each other while media controls the narrative.

The 'no voice' theme has often become literal with train passengers told not to speak to each other in case they pass on the 'virus', singing banned for the same reason and bonkers California officials telling people riding roller coasters that they cannot shout and scream. Cathy said she heard every day from healed MKUltra survivors who cannot wear a mask without flashing back on ways

their breathing was controlled – 'from ball gags and penises to water boarding'. She said that through the years when she saw images of people in China wearing masks 'due to pollution' that it was really to control their oxygen levels. 'I knew it was as much of a population control mechanism of depersonalisation as are burkas', she said. Masks are another Chinese communist/fascist method of control that has been swept across the West as the West becomes China at lightning speed since we entered 2020.

Mask-19

There are other reasons for mandatory masks and these include destroying respiratory health to call it 'Covid-19' and stunting brain development of children and the young. Dr Margarite Griesz-Brisson MD, PhD, is a Consultant Neurologist and Neurophysiologist and the Founder and Medical Director of the London Neurology and Pain Clinic. Her CV goes down the street and round the corner. She is clearly someone who cares about people and won't parrot the propaganda. Griesz-Brisson has a PhD in pharmacology, with special interest in neurotoxicology, environmental medicine, neuroregeneration and neuroplasticity (the way the brain can change in the light of information received). She went public in October, 2020, with a passionate warning about the effects of mask-wearing laws:

> The reinhalation of our exhaled air will without a doubt create oxygen deficiency and a flooding of carbon dioxide. We know that the human brain is very sensitive to oxygen deprivation. There are nerve cells for example in the hippocampus that can't be longer than 3 minutes without oxygen – they cannot survive. The acute warning symptoms are headaches, drowsiness, dizziness, issues in concentration, slowing down of reaction time – reactions of the cognitive system.

Oh, I know, let's tell bus, truck and taxi drivers to wear them and people working machinery. How about pilots, doctors and police? Griesz-Brisson makes the important point that while the symptoms she mentions may fade as the body readjusts this does not alter the fact that people continue to operate in oxygen deficit with long list of

potential consequences. She said it was well known that neurodegenerative diseases take years or decades to develop. 'If today you forget your phone number, the breakdown in your brain would have already started 20 or 30 years ago.' She said degenerative processes in your brain are getting amplified as your oxygen deprivation continues through wearing a mask. Nerve cells in the brain are unable to divide themselves normally in these circumstances and lost nerve cells will no longer be regenerated. 'What is gone is gone.' Now consider that people like shop workers and *schoolchildren* are wearing masks for hours every day. What in the name of sanity is going to be happening to them? 'I do not wear a mask, I need my brain to think', Griesz-Brisson said, 'I want to have a clear head when I deal with my patients and not be in a carbon dioxide-induced anaesthesia'. If you are told to wear a mask anywhere ask the organisation, police, store, whatever, for their risk assessment on the dangers and negative effects on mind and body of enforcing mask-wearing. They won't have one because it has never been done not even by government. All of them must be subject to class-action lawsuits as the consequences come to light. They don't do mask risk assessments for an obvious reason. They know what the conclusions would be and independent scientific studies that *have* been done tell a horror story of consequences.

'Masks are criminal'

Dr Griesz-Brisson said that for children and adolescents, masks are an absolute no-no. They had an extremely active and adaptive immune system and their brain was incredibly active with so much to learn. 'The child's brain, or the youth's brain, is thirsting for oxygen.' The more metabolically active an organ was, the more oxygen it required; and in children and adolescents every organ was metabolically active. Griesz-Brisson said that to deprive a child's or adolescent's brain of oxygen, or to restrict it in any way, was not only dangerous to their health, it was absolutely criminal. 'Oxygen deficiency inhibits the development of the brain, and the damage that has taken place as a result CANNOT be reversed.' Mind

manipulators of MKUltra put masks on two-year-olds they wanted to neurologically rewire and you can see why. Griesz-Brisson said a child needs the brain to learn and the brain needs oxygen to function. 'We don't need a clinical study for that. This is simple, indisputable physiology.' Consciously and purposely induced oxygen deficiency was an absolutely deliberate health hazard, and an absolute medical contraindication which means that 'this drug, this therapy, this method or measure should not be used, and is not allowed to be used'. To coerce an entire population to use an absolute medical contraindication by force, she said, there had to be definite and serious reasons and the reasons must be presented to competent interdisciplinary and independent bodies to be verified and authorised. She had this warning of the consequences that were coming if mask wearing continued:

When, in ten years, dementia is going to increase exponentially, and the younger generations couldn't reach their god-given potential, it won't help to say 'we didn't need the masks'. I know how damaging oxygen deprivation is for the brain, cardiologists know how damaging it is for the heart, pulmonologists know how damaging it is for the lungs. Oxygen deprivation damages every single organ. Where are our health departments, our health insurance, our medical associations? It would have been their duty to be vehemently against the lockdown and to stop it and stop it from the very beginning.

Why do the medical boards issue punishments to doctors who give people exemptions? Does the person or the doctor seriously have to prove that oxygen deprivation harms people? What kind of medicine are our doctors and medical associations representing? Who is responsible for this crime? The ones who want to enforce it? The ones who let it happen and play along, or the ones who don't prevent it?

All of the organisations and people she mentions there either answer directly to the Cult or do whatever hierarchical levels above them tell them to do. The outcome of both is the same. 'It's not about masks, it's not about viruses, it's certainly not about your health', Griesz-Brisson said. 'It is about much, much more. I am not participating. I am not afraid.' They were taking our air to breathe and there was no unfounded medical exemption from face masks. Oxygen deprivation was dangerous for every single brain. It had to be the free decision of every human being whether they want to

wear a mask that was absolutely ineffective to protect themselves from a virus. She ended by rightly identifying where the responsibility lies for all this:

> The imperative of the hour is personal responsibility. We are responsible for what we think, not the media. We are responsible for what we do, not our superiors. We are responsible for our health, not the World Health Organization. And we are responsible for what happens in our country, not the government.

Halle-bloody-lujah.

But surgeons wear masks, right?

Independent studies of mask-wearing have produced a long list of reports detailing mental, emotional and physical dangers. What a definition of insanity to see police officers imposing mask-wearing on the public which will cumulatively damage their health while the police themselves wear masks that will cumulatively damage *their* health. It's utter madness and both public and police do this because 'the government says so' – yes a government of brain-donor idiots like UK Health Secretary Matt Hancock reading the 'follow the science' scripts of psychopathic, lunatic psychologists. The response you get from Stockholm syndrome sufferers defending the very authorities that are destroying them and their families is that 'surgeons wear masks'. This is considered the game, set and match that they must work and don't cause oxygen deficit. Well, actually, scientific studies have shown that they *do* and oxygen levels are monitored in operating theatres to compensate. Surgeons wear masks to stop spittle and such like dropping into open wounds – not to stop 'viral particles' which are so miniscule they can only be seen through an electron microscope. Holes in the masks are significantly bigger than 'viral particles' and if you sneeze or cough they will breach the mask. I watched an incredibly disingenuous 'experiment' that claimed to prove that masks work in catching 'virus' material from the mouth and nose. They did this with a slow motion camera and the mask did block big stuff which stayed inside the mask and

against the face to be breathed in or cause infections on the face as we have seen with many children. 'Viral particles', however, would never have been picked up by the camera as they came through the mask when they are far too small to be seen. The 'experiment' was therefore disingenuous *and* useless.

Studies have concluded that wearing masks in operating theatres (and thus elsewhere) make no difference to preventing infection while the opposite is true with toxic shite building up in the mask and this had led to an explosion in tooth decay and gum disease dubbed by dentists 'mask mouth'. You might have seen the Internet video of a furious American doctor urging people to take off their masks after a four-year-old patient had been rushed to hospital the night before and nearly died with a lung infection that doctors sourced to mask wearing. A study in the journal *Cancer Discovery* found that inhalation of harmful microbes can contribute to advanced stage lung cancer in adults and long-term use of masks can help breed dangerous pathogens. Microbiologists have said frequent mask wearing creates a moist environment in which microbes can grow and proliferate before entering the lungs. The Canadian Agency for Drugs and Technologies in Health, or CADTH, a Canadian national organisation that provides research and analysis to healthcare decision-makers, said this as long ago as 2013 in a report entitled 'Use of Surgical Masks in the Operating Room: A Review of the Clinical Effectiveness and Guidelines'. It said:

- No evidence was found to support the use of surgical face masks to reduce the frequency of surgical site infections
- No evidence was found on the effectiveness of wearing surgical face masks to protect staff from infectious material in the operating room.
- Guidelines recommend the use of surgical face masks by staff in the operating room to protect both operating room staff and patients (despite the lack of evidence).

We were told that the world could go back to 'normal' with the arrival of the 'vaccines'. When they came, fraudulent as they are, the story changed as I knew that it would. We are in the midst of transforming 'normal', not going back to it. Mary Ramsay, head of immunisation at Public Health England, echoed the words of US criminal Anthony Fauci who said masks and other regulations must stay no matter if people are vaccinated. The Fauci idiot continued to wear two masks – different colours so both could be clearly seen – after he *claimed* to have been vaccinated. Senator Rand Paul told Fauci in one exchange that his double-masks were 'theatre' and he was right. It's all theatre. Mary Ramsay back-tracked on the vaccine-return-to-normal theme when she said the public may need to wear masks and social-distance for years despite the jabs. 'People have got used to those lower-level restrictions now, and [they] can live with them', she said telling us what the idea has been all along. 'The vaccine does not give you a pass, even if you have had it, you must continue to follow all the guidelines' said a Public Health England statement which reneged on what we had been told before and made having the 'vaccine' irrelevant to 'normality' even by the official story. Spain's fascist government trumped everyone by passing a law mandating the wearing of masks on the beach and even when swimming in the sea. The move would have devastated what's left of the Spanish tourist industry, posed potential breathing dangers to swimmers and had Northern European sunbathers walking around with their forehead brown and the rest of their face white as a sheet. The ruling was so crazy that it had to be retracted after pressure from public and tourist industry, but it confirmed where the Cult wants to go with masks and how clinically insane authority has become. The determination to make masks permanent and hide the serious dangers to body and mind can be seen in the censorship of scientist Professor Denis Rancourt by Bill Gates-funded academic publishing website ResearchGate over his papers exposing the dangers and uselessness of masks. Rancourt said:

ResearchGate today has permanently locked my account, which I have had since 2015. Their reasons graphically show the nature of their attack against democracy, and their corruption of

science … By their obscene non-logic, a scientific review of science articles reporting on harms caused by face masks has a 'potential to cause harm'. No criticism of the psychological device (face masks) is tolerated, if the said criticism shows potential to influence public policy.

This is what happens in a fascist world.

Where are the 'greens' (again)?

Other dangers of wearing masks especially regularly relate to the inhalation of minute plastic fibres into the lungs and the deluge of discarded masks in the environment and oceans. Estimates predicted that more than 1.5 billion disposable masks will end up in the world's oceans every year polluting the water with tons of plastic and endangering marine wildlife. Studies project that humans are using 129 billion face masks each month worldwide – about three million a minute. Most are disposable and made from plastic, non-biodegradable microfibers that break down into smaller plastic particles that become widespread in ecosystems. They are littering cities, clogging sewage channels and turning up in bodies of water. I have written in other books about the immense amounts of microplastics from endless sources now being absorbed into the body. Rolf Halden, director of the Arizona State University (ASU) Biodesign Center for Environmental Health Engineering, was the senior researcher in a 2020 study that analysed 47 human tissue samples and found microplastics in all of them. 'We have detected these chemicals of plastics in every single organ that we have investigated', he said. I wrote in *The Answer* about the world being deluged with microplastics. A study by the Worldwide Fund for Nature (WWF) found that people are consuming on average every week some 2,000 tiny pieces of plastic mostly through water and also through marine life and the air. Every year humans are ingesting enough microplastics to fill a heaped dinner plate and in a life-time of 79 years it is enough to fill two large waste bins. Marco Lambertini, WWF International director general said: 'Not only are plastics polluting our oceans and waterways and killing marine life – it's in all of us and we can't escape consuming plastics,' American

geologists found tiny plastic fibres, beads and shards in rainwater samples collected from the remote slopes of the Rocky Mountain National Park near Denver, Colorado. Their report was headed: 'It is raining plastic.' Rachel Adams, senior lecturer in Biomedical Science at Cardiff Metropolitan University, said that among health consequences are internal inflammation and immune responses to a 'foreign body'. She further pointed out that microplastics become carriers of toxins including mercury, pesticides and dioxins (a known cause of cancer and reproductive and developmental problems). These toxins accumulate in the fatty tissues once they enter the body through microplastics. Now this is being compounded massively by people putting plastic on their face and throwing it away.

Workers exposed to polypropylene plastic fibres known as 'flock' have developed 'flock worker's lung' from inhaling small pieces of the flock fibres which can damage lung tissue, reduce breathing capacity and exacerbate other respiratory problems. *Now* … commonly used surgical masks have three layers of melt-blown textiles made of … polypropylene. We have billions of people putting these microplastics against their mouth, nose and face for hours at a time day after day in the form of masks. How does anyone think that will work out? I mean – what could possibly go wrong? We posted a number of scientific studies on this at davidicke.com, but when I went back to them as I was writing this book the links to the science research website where they were hosted were dead. Anything that challenges the official narrative in any way is either censored or vilified. The official narrative is so unsupportable by the evidence that only deleting the truth can protect it. A study by Chinese scientists still survived – with the usual twist which it why it was still active, I guess. Yes, they found that virtually all the masks they tested increased the daily intake of microplastic fibres, but people should still wear them because the danger from the 'virus' was worse said the crazy 'team' from the Institute of Hydrobiology in Wuhan. Scientists first discovered microplastics in lung tissue of some patients who died of lung cancer

in the 1990s. Subsequent studies have confirmed the potential health damage with the plastic degrading slowly and remaining in the lungs to accumulate in volume. Wuhan researchers used a machine simulating human breathing to establish that masks shed up to nearly 4,000 microplastic fibres in a month with reused masks producing more. Scientists said some masks are laced with toxic chemicals and a variety of compounds seriously restricted for both health and environmental reasons. They include cobalt (used in blue dye) and formaldehyde known to cause watery eyes, burning sensations in the eyes, nose, and throat, plus coughing, wheezing and nausea. No – that must be 'Covid-19'.

Mask 'worms'

There is another and potentially even more sinister content of masks. Mostly new masks of different makes filmed under a microscope around the world have been found to contain strange black fibres or 'worms' that appear to move or 'crawl' by themselves and react to heat and water. The nearest I have seen to them are the self-replicating fibres that are pulled out through the skin of those suffering from Morgellons disease which has been connected to the phenomena of 'chemtrails' which I will bring into the story later on. Morgellons fibres continue to grow outside the body and have a form of artificial intelligence. Black 'worm' fibres in masks have that kind of feel to them and there is a nanotechnology technique called 'worm micelles' which carry and release drugs or anything else you want to deliver to the body. For sure the suppression of humanity by mind altering drugs is the Cult agenda big time and the more excuses they can find to gain access to the body the more opportunities there are to make that happen whether through 'vaccines' or masks pushed against the mouth and nose for hours on end.

So let us summarise the pros and cons of masks:

Against masks: Breathing in your own carbon dioxide; depriving the body and brain of sufficient oxygen; build-up of toxins in the mask that can be breathed into the lungs and cause rashes on the face and 'mask-mouth'; breathing microplastic fibres and toxic chemicals into the lungs; dehumanisation and deleting individualisation by literally making people faceless; destroying human emotional interaction through facial expression and deleting parental connection with their babies which look for guidance to their facial expression.

For masks: They don't protect you from a 'virus' that doesn't exist and even if it did 'viral' particles are so minute they are smaller than the holes in the mask.

Governments, police, supermarkets, businesses, transport companies, and all the rest who seek to impose masks have done no risk assessment on their consequences for health and psychology and are now open to group lawsuits when the impact becomes clear with a cumulative epidemic of respiratory and other disease. Authorities will try to exploit these effects and hide the real cause by dubbing them 'Covid-19'. Can you imagine setting out to force the population to wear health-destroying masks without doing any assessment of the risks? It is criminal and it is evil, but then how many people targeted in this way, who see their children told to wear them all day at school, have asked for a risk assessment? Billions can't be imposed upon by the few unless the billions allow it. Oh, yes, with just a tinge of irony, 85 percent of all masks made worldwide come from *China*.

Wash your hands in toxic shite

'Covid' rules include the use of toxic sanitisers and again the health consequences of constantly applying toxins to be absorbed through the skin is obvious to any level of Renegade Mind. America's Food and Drug Administration (FDA) said that sanitisers are drugs and issued a warning about 75 dangerous brands which contain

methanol used in antifreeze and can cause death, kidney damage and blindness. The FDA circulated the following warning even for those brands that it claims to be safe:

Store hand sanitizer out of the reach of pets and children, and children should use it only with adult supervision. Do not drink hand sanitizer. This is particularly important for young children, especially toddlers, who may be attracted by the pleasant smell or brightly colored bottles of hand sanitizer.

Drinking even a small amount of hand sanitizer can cause alcohol poisoning in children. (However, there is no need to be concerned if your children eat with or lick their hands after using hand sanitizer.) During this coronavirus pandemic, poison control centers have had an increase in calls about accidental ingestion of hand sanitizer, so it is important that adults monitor young children's use.

Do not allow pets to swallow hand sanitizer. If you think your pet has eaten something potentially dangerous, call your veterinarian or a pet poison control center right away. Hand sanitizer is flammable and should be stored away from heat and flames. When using hand sanitizer, rub your hands until they feel completely dry before performing activities that may involve heat, sparks, static electricity, or open flames.

There you go, perfectly safe, then, and that's without even a mention of the toxins absorbed through the skin. Come on kids – sanitise your hands everywhere you go. It will save you from the 'virus'. Put all these elements together of the 'Covid' normal and see how much health and psychology is being cumulatively damaged, even devastated, to 'protect your health'. Makes sense, right? They are only imposing these things because they care, right? *Right?*

Submitting to insanity

Psychological reframing of the population goes very deep and is done in many less obvious ways. I hear people say how contradictory and crazy 'Covid' rules are and how they are ever changing. This is explained away by dismissing those involved as idiots. It is a big mistake. The Cult is delighted if its cold calculation is perceived as incompetence and idiocy when it is anything but. Oh, yes, there are idiots within the system – lots of them – but they are *administering* the Cult agenda, mostly unknowingly. They are not deciding and dictating it. The bulwark against tyranny is self-

respect, always has been, always will be. It is self-respect that has broken every tyranny in history. By its very nature self-respect will not bow to oppression and its perpetrators. There is so little self-respect that it's always the few that overturn dictators. Many may eventually follow, but the few with the iron spines (self-respect) kick it off and generate the momentum. The Cult targets self-respect in the knowledge that once this has gone only submission remains. Crazy, contradictory, ever-changing 'Covid' rules are systematically applied by psychologists to delete self-respect. They *want* you to see that the rules make no sense. It is one thing to decide to do something when *you* have made the choice based on evidence and logic. You still retain your self-respect. It is quite another when you can see what you are being told to do is insane, ridiculous and makes no sense, and *yet you still do it*. Your self-respect is extinguished and this has been happening as ever more obviously stupid and nonsensical things have been demanded and the great majority have complied even when they can see they are stupid and nonsensical.

People walk around in face-nappies knowing they are damaging their health and make no difference to a 'virus'. They do it in fear of not doing it. I know it's daft, but I'll do it anyway. When that happens something dies inside of you and submissive reframing has begun. Next there's a need to hide from yourself that you have conceded your self-respect and you convince yourself that you have not really submitted to fear and intimidation. You begin to believe that you are complying with craziness because it's the right thing to do. When first you concede your self-respect of 2+2 = 4 to 2+2 = 5 you *know* you are compromising your self-respect. Gradually to avoid facing that fact you begin to *believe* that 2+2=5. You have been reframed and I have been watching this process happening in the human psyche on an industrial scale. The Cult is working to break your spirit and one of its major tools in that war is humiliation. I read how former American soldier Bradley Manning (later Chelsea Manning after a sex-change) was treated after being jailed for supplying WikiLeaks with documents exposing the enormity of

government and elite mendacity. Manning was isolated in solitary confinement for eight months, put under 24-hour surveillance, forced to hand over clothing before going to bed, and stand naked for every roll call. This is systematic humiliation. The introduction of anal swab 'Covid' tests in China has been done for the same reason to delete self-respect and induce compliant submission. Anal swabs are mandatory for incoming passengers in parts of China and American diplomats have said they were forced to undergo the indignity which would have been calculated humiliation by the Cult-owned Chinese government that has America in its sights.

Government-people: An abusive relationship

Spirit-breaking psychological techniques include giving people hope and apparent respite from tyranny only to take it away again. This happened in the UK during Christmas, 2020, when the psycho-psychologists and their political lackeys announced an easing of restrictions over the holiday only to reimpose them almost immediately on the basis of yet another lie. There is a big psychological difference between getting used to oppression and being given hope of relief only to have that dashed. Psychologists know this and we have seen the technique used repeatedly. Then there is traumatising people before you introduce more extreme regulations that require compliance. A perfect case was the announcement by the dark and sinister Whitty and Vallance in the UK that 'new data' predicted that 4,000 could die every day over the winter of 2020/2021 if we did not lockdown again. I think they call it lying and after traumatising people with that claim out came Jackboot Johnson the next day with new curbs on human freedom. Psychologists know that a frightened and traumatised mind becomes suggestable to submission and behaviour reframing. Underpinning all this has been to make people fearful and suspicious of each other and see themselves as a potential danger to others. In league with deleted self-respect you have the perfect psychological recipe for self-loathing. The relationship between authority and public is now demonstrably the same as that of

subservience to an abusive partner. These are signs of an abusive relationship explained by psychologist Leslie Becker-Phelps:

Psychological and emotional abuse: Undermining a partner's self-worth with verbal attacks, name-calling, and belittling. Humiliating the partner in public, unjustly accusing them of having an affair, or interrogating them about their every behavior. Keeping partner confused or off balance by saying they were just kidding or blaming the partner for 'making' them act this way … Feigning in public that they care while turning against them in private. This leads to victims frequently feeling confused, incompetent, unworthy, hopeless, and chronically self-doubting. [Apply these techniques to how governments have treated the population since New Year, 2020, and the parallels are obvious.]

Physical abuse: The abuser might physically harm their partner in a range of ways, such as grabbing, hitting, punching, or shoving them. They might throw objects at them or harm them with a weapon. [Observe the physical harm imposed by masks, lockdown, and so on.]

Threats and intimidation: One way abusers keep their partners in line is by instilling fear. They might be verbally threatening, or give threatening looks or gestures. Abusers often make it known that they are tracking their partner's every move. They might destroy their partner's possessions, threaten to harm them, or threaten to harm their family members. Not surprisingly, victims of this abuse often feel anxiety, fear, and panic. [No words necessary.]

Isolation: Abusers often limit their partner's activities, forbidding them to talk or interact with friends or family. They might limit access to a car or even turn off their phone. All of this might be done by physically holding them against their will, but is often accomplished through psychological abuse and intimidation. The more isolated a person feels, the fewer resources they have to help gain perspective on their situation and to escape from it. [No words necessary.]

Economic abuse: Abusers often make their partners beholden to them for money by controlling access to funds of any kind. They might prevent their partner from getting a job or withhold access to money they earn from a job. This creates financial dependency that makes leaving the relationship very difficult. [See destruction of livelihoods and the proposed meagre 'guaranteed income' so long as you do whatever you are told.]

Using children: An abuser might disparage their partner's parenting skills, tell their children lies about their partner, threaten to take custody of their children, or threaten to harm their children. These tactics instil fear and often elicit compliance. [See reframed social service mafia and how children are being mercilessly abused by the state over 'Covid' while their parents look on too frightened to do anything.]

A further recurring trait in an abusive relationship is the abused blaming themselves for their abuse and making excuses for the abuser. We have the public blaming each other for lockdown abuse by government and many making excuses for the government while attacking those who challenge the government. How often we have heard authorities say that rules are being imposed or reimposed only because people have refused to 'behave' and follow the rules. We don't want to do it – it's *you*.

Renegade Minds are an antidote to all of these things. They will never concede their self-respect no matter what the circumstances. Even when apparent humiliation is heaped upon them they laugh in its face and reflect back the humiliation on the abuser where it belongs. Renegade Minds will never wear masks they know are only imposed to humiliate, suppress and damage both physically and psychologically. Consequences will take care of themselves and they will never break their spirit or cause them to concede to tyranny. UK newspaper columnist Peter Hitchens was one of the few in the mainstream media to speak out against lockdowns and forced vaccinations. He then announced he had taken the jab. He wanted to see family members abroad and he believed vaccine passports were inevitable even though they had not yet been introduced. Hitchens

has a questioning and critical mind, but not a Renegade one. If he had no amount of pressure would have made him concede. Hitchens excused his action by saying that the battle has been lost. Renegade Minds never accept defeat when freedom is at stake and even if they are the last one standing the self-respect of not submitting to tyranny is more important than any outcome or any consequence.

That's why Renegade Minds are the only minds that ever changed anything worth changing.

CHAPTER EIGHT

'Reframing' insanity

Insanity is relative. It depends on who has who locked in what cage
Ray Bradbury

'Reframing' a mind means simply to change its perception and behaviour. This can be done subconsciously to such an extent that subjects have no idea they have been 'reframed' while to any observer changes in behaviour and attitudes are obvious.

Human society is being reframed on a ginormous scale since the start of 2020 and here we have the reason why psychologists rather than doctors have been calling the shots. Ask most people who have succumbed to 'Covid' reframing if they have changed and most will say 'no'; but they *have* and fundamentally. The Cult's long-game has been preparing for these times since way back and crucial to that has been to prepare both population and officialdom mentally and emotionally. To use the mind-control parlance they had to reframe the population with a mentality that would submit to fascism and reframe those in government and law enforcement to impose fascism or at least go along with it. The result has been the fact-deleted mindlessness of 'Wokeness' and officialdom that has either enthusiastically or unquestioningly imposed global tyranny demanded by reframed politicians on behalf of psychopathic and deeply evil cultists. 'Cognitive reframing' identifies and challenges the way someone sees the world in the form of situations, experiences and emotions and then restructures those perceptions to view the same set of circumstances in a different way. This can have

benefits if the attitudes are personally destructive while on the other side it has the potential for individual and collective mind control which the subject has no idea has even happened.

Cognitive therapy was developed in the 1960s by Aaron T. Beck who was born in Rhode Island in 1921 as the son of Jewish immigrants from the Ukraine. He became interested in the techniques as a treatment for depression. Beck's daughter Judith S. Beck is prominent in the same field and they founded the Beck Institute for Cognitive Behavior Therapy in Philadelphia in 1994. Cognitive reframing, however, began to be used worldwide by those with a very dark agenda. The Cult reframes politicians to change their attitudes and actions until they are completely at odds with what they once appeared to stand for. The same has been happening to government administrators at all levels, law enforcement, military and the human population. Cultists love mind control for two main reasons: It allows them to control what people think, do and say to secure agenda advancement and, by definition, it calms their legendary insecurity and fear of the unexpected. I have studied mind control since the time I travelled America in 1996. I may have been talking to next to no one in terms of an audience in those years, but my goodness did I gather a phenomenal amount of information and knowledge about so many things including the techniques of mind control. I have described this in detail in other books going back to *The Biggest Secret* in 1998. I met a very large number of people recovering from MKUltra and its offshoots and successors and I began to see how these same techniques were being used on the population in general. This was never more obvious than since the 'Covid' hoax began.

Reframing the enforcers

I have observed over the last two decades and more the very clear transformation in the dynamic between the police, officialdom and the public. I tracked this in the books as the relationship mutated from one of serving the public to seeing them as almost the enemy and certainly a lower caste. There has always been a class divide

based on income and always been some psychopathic, corrupt, and big-I-am police officers. This was different. Wholesale change was unfolding in the collective dynamic; it was less about money and far more about position and perceived power. An us-and-them was emerging. Noses were lifted skyward by government administration and law enforcement and their attitude to the public they were *supposed* to be serving changed to one of increasing contempt, superiority and control. The transformation was so clear and widespread that it had to be planned. Collective attitudes and dynamics do not change naturally and organically that quickly on that scale. I then came across an organisation in Britain called Common Purpose created in the late 1980s by Julia Middleton who would work in the office of Deputy Prime Minister John Prescott during the long and disastrous premiership of war criminal Tony Blair. When Blair speaks the Cult is speaking and the man should have been in jail a long time ago. Common Purpose proclaims itself to be one of the biggest 'leadership development' organisations in the world while functioning as a *charity* with all the financial benefits which come from that. It hosts 'leadership development' courses and programmes all over the world and claims to have 'brought together' what it calls 'leaders' from more than 100 countries on six continents. The modus operandi of Common Purpose can be compared with the work of the UK government's reframing network that includes the Behavioural Insights Team 'nudge unit' and 'Covid' reframing specialists at SPI-B. WikiLeaks described Common Purpose long ago as 'a hidden virus in our government and schools' which is unknown to the general public: 'It recruits and trains "leaders" to be loyal to the directives of Common Purpose and the EU, instead of to their own departments, which they then undermine or subvert, the NHS [National Health Service] being an example.' This is a vital point to understand the 'Covid' hoax. The NHS, and its equivalent around the world, has been utterly reframed in terms of administrators and much of the medical personnel with the transformation underpinned by recruitment policies. The outcome has been the criminal and psychopathic behaviour of the

NHS over 'Covid' and we have seen the same in every other major country. WikiLeaks said Common Purpose trainees are 'learning to rule without regard to democracy' and to usher in a police state (current events explained). Common Purpose operated like a 'glue' and had members in the NHS, BBC, police, legal profession, church, many of Britain's 7,000 quangos, local councils, the Civil Service, government ministries and Parliament, and controlled many RDA's (Regional Development Agencies). Here we have one answer for how and why British institutions and their like in other countries have changed so negatively in relation to the public. This further explains how and why the beyond-disgraceful reframed BBC has become a propaganda arm of 'Covid' fascism. They are all part of a network pursuing the same goal.

By 2019 Common Purpose was quoting a figure of 85,000 'leaders' that had attended its programmes. These 'students' of all ages are known as Common Purpose 'graduates' and they consist of government, state and local government officials and administrators, police chiefs and officers, and a whole range of others operating within the national, local and global establishment. Cressida Dick, Commissioner of the London Metropolitan Police, is the Common Purpose graduate who was the 'Gold Commander' that oversaw what can only be described as the murder of Brazilian electrician Jean Charles de Menezes in 2005. He was held down by psychopathic police and shot seven times in the head by a psychopathic lunatic after being mistaken for a terrorist when he was just a bloke going about his day. Dick authorised officers to pursue and keep surveillance on de Menezes and ordered that he be stopped from entering the underground train system. Police psychopaths took her at her word clearly. She was 'disciplined' for this outrage by being *promoted* – eventually to the top of the 'Met' police where she has been a disaster. Many Chief Constables controlling the police in different parts of the UK are and have been Common Purpose graduates. I have heard the 'graduate' network described as a sort of Mafia or secret society operating within the fabric of government at all levels pursuing a collective policy

ingrained at Common Purpose training events. Founder Julia Middleton herself has said:

> Locally and internationally, Common Purpose graduates will be 'lighting small fires' to create change in their organisations and communities … The Common Purpose effect is best illustrated by the many stories of small changes brought about by leaders, who themselves have changed.

A Common Purpose mission statement declared:

> Common Purpose aims to improve the way society works by expanding the vision, decision-making ability and influence of all kinds of leaders. The organisation runs a variety of educational programmes for leaders of all ages, backgrounds and sectors, in order to provide them with the inspirational, information and opportunities they need to change the world.

Yes, but into what? Since 2020 the answer has become clear.

NLP and the Delphi technique

Common Purpose would seem to be a perfect name or would common programming be better? One of the foundation methods of reaching 'consensus' (group think) is by setting the agenda theme and then encouraging, cajoling or pressuring everyone to agree a 'consensus' in line with the core theme promoted by Common Purpose. The methodology involves the 'Delphi technique', or an adaption of it, in which opinions are expressed that are summarised by a 'facilitator or change agent' at each stage. Participants are 'encouraged' to modify their views in the light of what others have said. Stage by stage the former individual opinions are merged into group consensus which just happens to be what Common Purpose wants them to believe. A key part of this is to marginalise anyone refusing to concede to group think and turn the group against them to apply pressure to conform. We are seeing this very technique used on the general population to make 'Covid' group-thinkers hostile to those who have seen through the bullshit. People can be reframed by using perception manipulation methods such as Neuro-Linguistic Programming (NLP) in which you change perception with the use of

carefully constructed language. An NLP website described the technique this way:

… A method of influencing brain behaviour (the 'neuro' part of the phrase) through the use of language (the 'linguistic' part) and other types of communication to enable a person to 'recode' the way the brain responds to stimuli (that's the 'programming') and manifest new and better behaviours. Neuro-Linguistic Programming often incorporates hypnosis and self-hypnosis to help achieve the change (or 'programming') that is wanted.

British alternative media operation UKColumn has done very detailed research into Common Purpose over a long period. I quoted co-founder and former naval officer Brian Gerrish in my book *Remember Who You Are*, published in 2011, as saying the following years before current times:

It is interesting that many of the mothers who have had children taken by the State speak of the Social Services people being icily cool, emotionless and, as two ladies said in slightly different words, '… like little robots'. We know that NLP is cumulative, so people can be given small imperceptible doses of NLP in a course here, another in a few months, next year etc. In this way, major changes are accrued in their personality, but the day by day change is almost unnoticeable.

In these and other ways 'graduates' have had their perceptions uniformly reframed and they return to their roles in the institutions of government, law enforcement, legal profession, military, 'education', the UK National Health Service and the whole swathe of the establishment structure to pursue a common agenda preparing for the 'post-industrial', 'post-democratic' society. I say 'preparing' but we are now there. 'Post-industrial' is code for the Great Reset and 'post-democratic' is 'Covid' fascism. UKColumn has spoken to partners of those who have attended Common Purpose 'training'. They have described how personalities and attitudes of 'graduates' changed very noticeably for the worse by the time they had completed the course. They had been 'reframed' and told they are the 'leaders' – the special ones – who know better than the population. There has also been the very demonstrable recruitment of psychopaths and narcissists into government administration at all

levels and law enforcement. If you want psychopathy hire psychopaths and you get a simple cause and effect. If you want administrators, police officers and 'leaders' to perceive the public as lesser beings who don't matter then employ narcissists. These personalities are identified using 'psychometrics' that identifies knowledge, abilities, attitudes and personality traits, mostly through carefully-designed questionnaires and tests. As this policy has passed through the decades we have had power-crazy, power-trippers appointed into law enforcement, security and government administration in preparation for current times and the dynamic between public and law enforcement/officialdom has been transformed. UKColumn's Brian Gerrish said of the narcissistic personality:

> Their love of themselves and power automatically means that they will crush others who get in their way. I received a major piece of the puzzle when a friend pointed out that when they made public officials re-apply for their own jobs several years ago they were also required to do psychometric tests. This was undoubtedly the start of the screening process to get 'their' sort of people in post.

How obvious that has been since 2020 although it was clear what was happening long before if people paid attention to the changing public-establishment dynamic.

Change agents

At the centre of events in 'Covid' Britain is the National Health Service (NHS) which has behaved disgracefully in slavishly following the Cult agenda. The NHS management structure is awash with Common Purpose graduates or 'change agents' working to a common cause. Helen Bevan, a Chief of Service Transformation at the NHS Institute for Innovation and Improvement, co-authored a document called 'Towards a million change agents, a review of the social movements literature: implications for large scale change in the NHS'. The document compared a project management approach to that of change and social movements where 'people change

themselves and each other – peer to peer'. Two definitions given for a 'social movement' were:

A group of people who consciously attempt to build a radically new social order; involves people of a broad range of social backgrounds; and deploys politically confrontational and socially disruptive tactics – Cyrus Zirakzadeh 1997

Collective challenges, based on common purposes and social solidarities, in sustained interaction with elites, opponents, and authorities – Sidney Tarrow 1994

Helen Bevan wrote another NHS document in which she defined 'framing' as 'the process by which leaders construct, articulate and put across their message in a powerful and compelling way in order to win people to their cause and call them to action'. I think I could come up with another definition that would be rather more accurate. The National Health Service and institutions of Britain and the wider world have been taken over by reframed 'change agents' and that includes everything from the United Nations to national governments, local councils and social services which have been kidnapping children from loving parents on an extraordinary and gathering scale on the road to the end of parenthood altogether. Children from loving homes are stolen and kidnapped by the state and put into the 'care' (inversion) of the local authority through council homes, foster parents and forced adoption. At the same time children are allowed to be abused without response while many are under council 'care'. UKColumn highlighted the Common Purpose connection between South Yorkshire Police and Rotherham council officers in the case of the scandal in that area of the sexual exploitation of children to which the authorities turned not one blind eye, but both:

We were alarmed to discover that the Chief Executive, the Strategic Director of Children and Young People's Services, the Manager for the Local Strategic Partnership, the Community Cohesion Manager, the Cabinet Member for Cohesion, the Chief Constable and his predecessor had all attended Leadership training courses provided by the pseudo-charity Common Purpose.

Once 'change agents' have secured positions of hire and fire within any organisation things start to move very quickly. Personnel are then hired and fired on the basis of whether they will work towards the agenda the change agent represents. If they do they are rapidly promoted even though they may be incompetent. Those more qualified and skilled who are pre-Common Purpose 'old school' see their careers stall and even disappear. This has been happening for decades in every institution of state, police, 'health' and social services and all of them have been transformed as a result in their attitudes to their jobs and the public. Medical professions, including nursing, which were once vocations for the caring now employ many cold, callous and couldn't give a shit personality types. The UKColumn investigation concluded:

By blurring the boundaries between people, professions, public and private sectors, responsibility and accountability, Common Purpose encourages 'graduates' to believe that as new selected leaders, they can work together, outside of the established political and social structures, to achieve a paradigm shift or CHANGE – so called 'Leading Beyond Authority'. In doing so, the allegiance of the individual becomes 'reframed' on CP colleagues and their NETWORK.

Reframing the Face-Nappies

Nowhere has this process been more obvious than in the police where recruitment of psychopaths and development of unquestioning mind-controlled group-thinkers have transformed law enforcement into a politically-correct 'Woke' joke and a travesty of what should be public service. Today they wear their face-nappies like good little gofers and enforce 'Covid' rules which are fascism under another name. Alongside the specifically-recruited psychopaths we have software minds incapable of free thought. Brian Gerrish again:

An example is the policeman who would not get on a bike for a press photo because he had not done the cycling proficiency course. Normal people say this is political correctness gone mad. Nothing could be further from the truth. The policeman has been reframed, and in his reality it is perfect common sense not to get on the bike 'because he hasn't done the cycling course'.

Another example of this is where the police would not rescue a boy from a pond until they had taken advice from above on the 'risk assessment'. A normal person would have arrived, perhaps thought of the risk for a moment, and dived in. To the police now 'reframed', they followed 'normal' procedure.

There are shocking cases of reframed ambulance crews doing the same. Sheer unthinking stupidity of London Face-Nappies headed by Common Purpose graduate Cressida Dick can be seen in their behaviour at a vigil in March, 2021, for a murdered woman, Sarah Everard. A police officer had been charged with the crime. Anyone with a brain would have left the vigil alone in the circumstances. Instead they 'manhandled' women to stop them breaking 'Covid rules' to betray classic reframing. Minds in the thrall of perception control have no capacity for seeing a situation on its merits and acting accordingly. 'Rules is rules' is their only mind-set. My father used to say that rules and regulations are for the guidance of the intelligent and the blind obedience of the idiot. Most of the intelligent, decent, coppers have gone leaving only the other kind and a few old school for whom the job must be a daily nightmare. The combination of psychopaths and rule-book software minds has been clearly on public display in the 'Covid' era with automaton robots in uniform imposing fascistic 'Covid' regulations on the population without any personal initiative or judging situations on their merits. There are thousands of examples around the world, but I'll make my point with the infamous Derbyshire police in the English East Midlands – the ones who think pouring dye into beauty spots and using drones to track people walking in the countryside away from anyone is called 'policing'. To them there are rules decreed by the government which they have to enforce and in their bewildered state a group gathering in a closed space and someone walking alone in the countryside are the same thing. It is beyond idiocy and enters the realm of clinical insanity.

Police officers in Derbyshire said they were 'horrified' – *horrified* – to find 15 to 20 'irresponsible' kids playing a football match at a closed leisure centre 'in breach of coronavirus restrictions'. When they saw the police the kids ran away leaving their belongings behind and the reframed men and women of Derbyshire police were seeking to establish their identities with a view to fining their parents. The most natural thing for youngsters to do – kicking a ball about – is turned into a criminal activity and enforced by the moronic software programs of Derbyshire police. You find the same mentality in every country. These barely conscious 'horrified' officers said they had to take action because 'we need to ensure these rules are being followed' and 'it is of the utmost importance that you ensure your children are following the rules and regulations for Covid-19'. Had any of them done ten seconds of research to see if this parroting of their masters' script could be supported by any evidence? Nope. Reframed people don't think – others think for them and that's the whole idea of reframing. I have seen police officers one after the other repeating without question word for word what officialdom tells them just as I have seen great swathes of the public doing the same. Ask either for 'their' opinion and out spews what they have been told to think by the official narrative. Police and public may seem to be in different groups, but their mentality is the same. Most people do whatever they are told in fear not doing so or because they believe what officialdom tells them; almost the entirety of the police do what they are told for the same reason. Ultimately it's the tiny inner core of the global Cult that's telling both what to do.

So Derbyshire police were 'horrified'. Oh, really? Why did they think those kids were playing football? It was to relieve the psychological consequences of lockdown and being denied human contact with their friends and interaction, touch and discourse vital to human psychological health. Being denied this month after month has dismantled the psyche of many children and young people as depression and suicide have exploded. Were Derbyshire police *horrified by that*? Are you kidding? Reframed people don't have those

mental and emotional processes that can see how the impact on the psychological health of youngsters is far more dangerous than any 'virus' even if you take the mendacious official figures to be true. The reframed are told (programmed) how to act and so they do. The Derbyshire Chief Constable in the first period of lockdown when the black dye and drones nonsense was going on was Peter Goodman. He was the man who severed the connection between his force and the Derbyshire Constabulary *Male Voice* Choir when he decided that it was not inclusive enough to allow women to join. The fact it was a male voice choir making a particular sound produced by male voices seemed to elude a guy who terrifyingly ran policing in Derbyshire. He retired weeks after his force was condemned as disgraceful by former Supreme Court Justice Jonathan Sumption for their behaviour over extreme lockdown impositions. Goodman was replaced by his deputy Rachel Swann who was in charge when her officers were 'horrified'. The police statement over the boys committing the hanging-offence of playing football included the line about the youngsters being 'irresponsible in the times we are all living through' missing the point that the real relevance of the 'times we are all living through' is the imposition of fascism enforced by psychopaths and reframed minds of police officers playing such a vital part in establishing the fascist tyranny that their own children and grandchildren will have to live in their entire lives. As a definition of insanity that is hard to beat although it might be run close by imposing masks on people that can have a serious effect on their health while wearing a face nappy all day themselves. Once again public and police do it for the same reason – the authorities tell them to and who are they to have the self-respect to say no?

Wokers in uniform

How reframed do you have to be to arrest a *six-year-old* and take him to court for *picking a flower* while waiting for a bus? Brain dead police and officialdom did just that in North Carolina where criminal proceedings happen regularly for children under nine. Attorney Julie Boyer gave the six-year-old crayons and a colouring book

during the 'flower' hearing while the 'adults' decided his fate. County Chief District Court Judge Jay Corpening asked: 'Should a child that believes in Santa Claus, the Easter Bunny and the tooth fairy be making life-altering decisions?' Well, of course not, but common sense has no meaning when you have a common purpose and a reframed mind. Treating children in this way, and police operating in American schools, is all part of the psychological preparation for children to accept a police state as normal all their adult lives. The same goes for all the cameras and biometric tracking technology in schools. Police training is focused on reframing them as snowflake Wokers and this is happening in the military. Pentagon top brass said that 'training sessions on extremism' were needed for troops who asked why they were so focused on the Capitol Building riot when Black Lives Matter riots were ignored. What's the difference between them some apparently and rightly asked. Actually, there is a difference. Five people died in the Capitol riot, only one through violence, and that was a police officer shooting an unarmed protestor. BLM riots killed at least 25 people and cost billions. Asking the question prompted the psychopaths and reframed minds that run the Pentagon to say that more 'education' (programming) was needed. Troop training is all based on psychological programming to make them fodder for the Cult – 'Military men are just dumb, stupid animals to be used as pawns in foreign policy' as Cult-to-his-DNA former Secretary of State Henry Kissinger famously said. Governments see the police in similar terms and it's time for those among them who can see this to defend the people and stop being enforcers of the Cult agenda upon the people.

The US military, like the country itself, is being targeted for destruction through a long list of Woke impositions. Cult-owned gaga 'President' Biden signed an executive order when he took office to allow taxpayer money to pay for transgender surgery for active military personnel and veterans. Are you a man soldier? No, I'm a LGBTQIA+ with a hint of Skoliosexual and Spectrasexual. Oh, good man. Bad choice of words you bigot. The Pentagon announced in March, 2021, the appointment of the first 'diversity and inclusion

officer' for US Special Forces. Richard Torres-Estrada arrived with the publication of a 'D&I Strategic Plan which will guide the enterprise-wide effort to institutionalize and sustain D&I'. If you think a Special Forces 'Strategic Plan' should have something to do with defending America you haven't been paying attention. Defending Woke is now the military's new role. Torres-Estrada has posted images comparing Donald Trump with Adolf Hitler and we can expect no bias from him as a representative of the supposedly non-political Pentagon. Cable news host Tucker Carlson said: 'The Pentagon is now the Yale faculty lounge but with cruise missiles.' Meanwhile Secretary of Defense Lloyd Austin, a board member of weapons-maker Raytheon with stock and compensation interests in October, 2020, worth $1.4 million, said he was purging the military of the 'enemy within' – anyone who isn't Woke and supports Donald Trump. Austin refers to his targets as 'racist extremists' while in true Woke fashion being himself a racist extremist. Pentagon documents pledge to 'eradicate, eliminate and conquer all forms of racism, sexism and homophobia'. The definitions of these are decided by 'diversity and inclusion committees' peopled by those who see racism, sexism and homophobia in every situation and opinion. Woke (the Cult) is dismantling the US military and purging testosterone as China expands its military and gives its troops 'masculinity training'. How do we think that is going to end when this is all Cult coordinated? The US military, like the British military, is controlled by Woke and spineless top brass who just go along with it out of personal career interests.

'Woke' means fast asleep

Mind control and perception manipulation techniques used on individuals to create group-think have been unleashed on the global population in general. As a result many have no capacity to see the obvious fascist agenda being installed all around them or what 'Covid' is really all about. Their brains are firewalled like a computer system not to process certain concepts, thoughts and realisations that are bad for the Cult. The young are most targeted as the adults they

will be when the whole fascist global state is planned to be fully implemented. They need to be prepared for total compliance to eliminate all pushback from entire generations. The Cult has been pouring billions into taking complete control of 'education' from schools to universities via its operatives and corporations and not least Bill Gates as always. The plan has been to transform 'education' institutions into programming centres for the mentality of 'Woke'. James McConnell, professor of psychology at the University of Michigan, wrote in *Psychology Today* in 1970:

> The day has come when we can combine sensory deprivation with drugs, hypnosis, and astute manipulation of reward and punishment, to gain almost absolute control over an individual's behaviour. It should then be possible to achieve a very rapid and highly effective type of brainwashing that would allow us to make dramatic changes in a person's behaviour and personality ...
>
> … We should reshape society so that we all would be trained from birth to want to do what society wants us to do. We have the techniques to do it... no-one owns his own personality you acquired, and there's no reason to believe you should have the right to refuse to acquire a new personality if your old one is anti-social.

This was the potential for mass brainwashing in 1970 and the mentality there displayed captures the arrogant psychopathy that drives it forward. I emphasise that not all young people have succumbed to Woke programming and those that haven't are incredibly impressive people given that today's young are the most perceptually-targeted generations in history with all the technology now involved. Vast swathes of the young generations, however, have fallen into the spell – and that's what it is – of Woke. The Woke mentality and perceptual program is founded on *inversion* and you will appreciate later why that is so significant. Everything with Woke is inverted and the opposite of what it is claimed to be. Woke was a term used in African-American culture from the 1900s and referred to an awareness of social and racial justice. This is not the meaning of the modern version or 'New Woke' as I call it in *The Answer*. Oh, no, Woke today means something very different no matter how much Wokers may seek to hide that and insist Old Woke and New

Woke are the same. See if you find any 'awareness of social justice' here in the modern variety:

- Woke demands 'inclusivity' while excluding anyone with a different opinion and calls for mass censorship to silence other views.

- Woke claims to stand against oppression when imposing oppression is the foundation of all that it does. It is the driver of political correctness which is nothing more than a Cult invention to manipulate the population to silence itself.

- Woke believes itself to be 'liberal' while pursuing a global society that can only be described as fascist (see 'anti-fascist' fascist Antifa).

- Woke calls for 'social justice' while spreading injustice wherever it goes against the common 'enemy' which can be easily identified as a differing view.

- Woke is supposed to be a metaphor for 'awake' when it is solid-gold asleep and deep in a Cult-induced coma that meets the criteria for 'off with the fairies'.

I state these points as obvious facts if people only care to look. I don't do this with a sense of condemnation. We need to appreciate that the onslaught of perceptual programming on the young has been incessant and merciless. I can understand why so many have been reframed, or, given their youth, framed from the start to see the world as the Cult demands. The Cult has had access to their minds day after day in its 'education' system for their entire formative years. Perception is formed from information received and the Cult-created system is a life-long download of information delivered to elicit a particular perception, thus behaviour. The more this has expanded into still new extremes in recent decades and ever-increasing censorship has deleted other opinions and information why wouldn't that lead to a perceptual reframing on a mass scale? I

have described already cradle-to-grave programming and in more recent times the targeting of young minds from birth to adulthood has entered the stratosphere. This has taken the form of skewing what is 'taught' to fit the Cult agenda and the omnipresent techniques of group-think to isolate non-believers and pressure them into line. There has always been a tendency to follow the herd, but we really are in a new world now in relation to that. We have parents who can see the 'Covid' hoax told by their children not to stop them wearing masks at school, being 'Covid' tested or having the 'vaccine' in fear of the peer-pressure consequences of being different. What is 'peer-pressure' if not pressure to conform to group-think? Renegade Minds never group-think and always retain a set of perceptions that are unique to them. Group-think is always underpinned by consequences for not group-thinking. Abuse now aimed at those refusing DNA-manipulating 'Covid vaccines' are a potent example of this. The biggest pressure to conform comes from the very group which is itself being manipulated. 'I am programmed to be part of a hive mind and so you must be.'

Woke control structures in 'education' now apply to every mainstream organisation. Those at the top of the 'education' hierarchy (the Cult) decide the policy. This is imposed on governments through the Cult network; governments impose it on schools, colleges and universities; their leadership impose the policy on teachers and academics and they impose it on children and students. At any level where there is resistance, perhaps from a teacher or university lecturer, they are targeted by the authorities and often fired. Students themselves regularly demand the dismissal of academics (increasingly few) at odds with the narrative that the students have been programmed to believe in. It is quite a thought that students who are being targeted by the Cult become so consumed by programmed group-think that they launch protests and demand the removal of those who are trying to push back against those targeting the students. Such is the scale of perceptual inversion. We see this with 'Covid' programming as the Cult imposes the rules via psycho-psychologists and governments on

shops, transport companies and businesses which impose them on their staff who impose them on their customers who pressure Pushbackers to conform to the will of the Cult which is in the process of destroying them and their families. Scan all aspects of society and you will see the same sequence every time.

Fact free Woke and hijacking the 'left'

There is no more potent example of this than 'Woke', a mentality only made possible by the deletion of factual evidence by an 'education' system seeking to produce an ever more uniform society. Why would you bother with facts when you don't know any? Deletion of credible history both in volume and type is highly relevant. Orwell said: 'Who controls the past controls the future: who controls the present controls the past.' They who control the perception of the past control the perception of the future and they who control the present control the perception of the past through the writing and deleting of history. Why would you oppose the imposition of Marxism in the name of Wokeism when you don't know that Marxism cost at least 100 million lives in the 20th century alone? Watch videos and read reports in which Woker generations are asked basic historical questions – it's mind-blowing. A survey of 2,000 people found that six percent of millennials (born approximately early1980s to early 2000s) believed the Second World War (1939-1945) broke out with the assassination of President Kennedy (in 1963) and one in ten thought Margaret Thatcher was British Prime Minister at the time. She was in office between 1979 and 1990. We are in a post-fact society. Provable facts are no defence against the fascism of political correctness or Silicon Valley censorship. Facts don't matter anymore as we have witnessed with the 'Covid' hoax. Sacrificing uniqueness to the Woke group-think religion is all you are required to do and that means thinking for yourself is the biggest Woke no, no. All religions are an expression of group-think and censorship and Woke is just another religion with an orthodoxy defended by group-think and censorship. Burned at

the stake becomes burned on Twitter which leads back eventually to burned at the stake as Woke humanity regresses to ages past.

The biggest Woke inversion of all is its creators and funders. I grew up in a traditional left of centre political household on a council estate in Leicester in the 1950s and 60s – you know, the left that challenged the power of wealth-hoarding elites and threats to freedom of speech and opinion. In those days students went on marches defending freedom of speech while today's Wokers march for its deletion. What on earth could have happened? Those very elites (collectively the Cult) that we opposed in my youth and early life have funded into existence the antithesis of that former left and hijacked the 'brand' while inverting everything it ever stood for. We have a mentality that calls itself 'liberal' and 'progressive' while acting like fascists. Cult billionaires and their corporations have funded themselves into control of 'education' to ensure that Woke programming is unceasing throughout the formative years of children and young people and that non-Wokers are isolated (that word again) whether they be students, teachers or college professors. The Cult has funded into existence the now colossal global network of Woke organisations that have spawned and promoted all the 'causes' on the Cult wish-list for global transformation and turned Wokers into demanders of them. Does anyone really think it's a coincidence that the Cult agenda for humanity is a carbon (sorry) copy of the societal transformations desired by Woke?? These are only some of them:

Political correctness: The means by which the Cult deletes all public debates that it knows it cannot win if we had the free-flow of information and evidence.

Human-caused 'climate change': The means by which the Cult seeks to transform society into a globally-controlled dictatorship imposing its will over the fine detail of everyone's lives 'to save the planet' which doesn't actually need saving.

Transgender obsession: Preparing collective perception to accept the 'new human' which would not have genders because it would be created technologically and not through procreation. I'll have much more on this in Human 2.0.

Race obsession: The means by which the Cult seeks to divide and rule the population by triggering racial division through the perception that society is more racist than ever when the opposite is the case. Is it perfect in that regard? No. But to compare today with the racism of apartheid and segregation brought to an end by the civil rights movement in the 1960s is to insult the memory of that movement and inspirations like Martin Luther King. Why is the 'anti-racism' industry (which it is) so dominated by privileged white people?

White supremacy: This is a label used by privileged white people to demonise poor and deprived white people pushing back on tyranny to marginalise and destroy them. White people are being especially targeted as the dominant race by number within Western society which the Cult seeks to transform in its image. If you want to change a society you must weaken and undermine its biggest group and once you have done that by using the other groups you next turn on them to do the same … 'Then they came for the Jews and I was not a Jew so I did nothing.'

Mass migration: The mass movement of people from the Middle East, Africa and Asia into Europe, from the south into the United States and from Asia into Australia are another way the Cult seeks to dilute the racial, cultural and political influence of white people on Western society. White people ask why their governments appear to be working against them while being politically and culturally biased towards incoming cultures. Well, here's your answer. In the same way sexually 'straight' people, men and women, ask why the

authorities are biased against them in favour of other sexualities. The answer is the same – that's the way the Cult wants it to be for very sinister motives.

These are all central parts of the Cult agenda and central parts of the Woke agenda and Woke was created and continues to be funded to an immense degree by Cult billionaires and corporations. If anyone begins to say 'coincidence' the syllables should stick in their throat.

Billionaire 'social justice warriors'

Joe Biden is a 100 percent-owned asset of the Cult and the Wokers' man in the White House whenever he can remember his name and for however long he lasts with his rapidly diminishing cognitive function. Even walking up the steps of an aircraft without falling on his arse would appear to be a challenge. He's not an empty-shell puppet or anything. From the minute Biden took office (or the Cult did) he began his executive orders promoting the Woke wish-list. You will see the Woke agenda imposed ever more severely because it's really the *Cult* agenda. Woke organisations and activist networks spawned by the Cult are funded to the extreme so long as they promote what the Cult wants to happen. Woke is funded to promote 'social justice' by billionaires who become billionaires by destroying social justice. The social justice mantra is only a cover for dismantling social justice and funded by billionaires that couldn't give a damn about social justice. Everything makes sense when you see that. One of Woke's premier funders is Cult billionaire financier George Soros who said: 'I am basically there to make money, I cannot and do not look at the social consequences of what I do.' This is the same Soros who has given more than $32 billion to his Open Society Foundations global Woke network and funded Black Lives Matter, mass immigration into Europe and the United States, transgender activism, climate change activism, political correctness and groups targeting 'white supremacy' in the form of privileged white thugs that dominate Antifa. What a scam it all is and when

you are dealing with the unquestioning fact-free zone of Woke scamming them is child's play. All you need to pull it off in all these organisations are a few in-the-know agents of the Cult and an army of naïve, reframed, uninformed, narcissistic, know-nothings convinced of their own self-righteousness, self-purity and virtue.

Soros and fellow billionaires and billionaire corporations have poured hundreds of millions into Black Lives Matter and connected groups and promoted them to a global audience. None of this is motivated by caring about black people. These are the billionaires that have controlled and exploited a system that leaves millions of black people in abject poverty and deprivation which they do absolutely nothing to address. The same Cult networks funding BLM were behind the *slave trade!* Black Lives Matter hijacked a phrase that few would challenge and they have turned this laudable concept into a political weapon to divide society. You know that BLM is a fraud when it claims that *All* Lives Matter, the most inclusive statement of all, is 'racist'. BLM and its Cult masters don't want to end racism. To them it's a means to an end to control all of humanity never mind the colour, creed, culture or background. What has destroying the nuclear family got to do with ending racism? Nothing – but that is one of the goals of BLM and also happens to be a goal of the Cult as I have been exposing in my books for decades. Stealing children from loving parents and giving schools ever more power to override parents is part of that same agenda. BLM is a Marxist organisation and why would that not be the case when the Cult created Marxism *and* BLM? Patrisse Cullors, a BLM co-founder, said in a 2015 video that she and her fellow organisers, including co-founder Alicia Garza, are 'trained Marxists'. The lady known after marriage as Patrisse Khan-Cullors bought a $1.4 million home in 2021 in one of the whitest areas of California with a black population of just 1.6 per cent and has so far bought *four* high-end homes for a total of $3.2 million. How very Marxist. There must be a bit of spare in the BLM coffers, however, when Cult corporations and billionaires have handed over the best part of $100 million. Many black people can see that Black Lives Matter is not

working for them, but against them, and this is still more confirmation. Black journalist Jason Whitlock, who had his account suspended by Twitter for simply linking to the story about the 'Marxist's' home buying spree, said that BLM leaders are 'making millions of dollars off the backs of these dead black men who they wouldn't spit on if they were on fire and alive'.

Black Lies Matter

Cult assets and agencies came together to promote BLM in the wake of the death of career criminal George Floyd who had been jailed a number of times including for forcing his way into the home of a black woman with others in a raid in which a gun was pointed at her stomach. Floyd was filmed being held in a Minneapolis street in 2020 with the knee of a police officer on his neck and he subsequently died. It was an appalling thing for the officer to do, but the same technique has been used by police on peaceful protestors of lockdown without any outcry from the Woke brigade. As unquestioning supporters of the Cult agenda Wokers have supported lockdown and all the 'Covid' claptrap while attacking anyone standing up to the tyranny imposed in its name. Court documents would later include details of an autopsy on Floyd by County Medical Examiner Dr Andrew Baker who concluded that Floyd had taken a fatal level of the drug fentanyl. None of this mattered to fact-free, question-free, Woke. Floyd's death was followed by worldwide protests against police brutality amid calls to defund the police. Throwing babies out with the bathwater is a Woke speciality. In the wake of the murder of British woman Sarah Everard a Green Party member of the House of Lords, Baroness Jones of Moulescoomb (Nincompoopia would have been better), called for a 6pm curfew for all men. This would be in breach of the Geneva Conventions on war crimes which ban collective punishment, but that would never have crossed the black and white Woke mind of Baroness Nincompoopia who would have been far too convinced of her own self-righteousness to compute such details. Many American cities did defund the police in the face of Floyd riots

and after $15 million was deleted from the police budget in Washington DC under useless Woke mayor Muriel Bowser car-jacking alone rose by 300 percent and within six months the US capital recorded its highest murder rate in 15 years. The same happened in Chicago and other cities in line with the Cult/Soros plan to bring fear to streets and neighbourhoods by reducing the police, releasing violent criminals and not prosecuting crime. This is the mob-rule agenda that I have warned in the books was coming for so long. Shootings in the area of Minneapolis where Floyd was arrested increased by 2,500 percent compared with the year before. Defunding the police over George Floyd has led to a big increase in dead people with many of them black. Police protection for politicians making these decisions stayed the same or increased as you would expect from professional hypocrites. The Cult doesn't actually want to abolish the police. It wants to abolish local control over the police and hand it to federal government as the psychopaths advance the Hunger Games Society. Many George Floyd protests turned into violent riots with black stores and businesses destroyed by fire and looting across America fuelled by Black Lives Matter. Woke doesn't do irony. If you want civil rights you must loot the liquor store and the supermarket and make off with a smart TV. It's the only way.

It's not a race war – it's a class war

Black people are patronised by privileged blacks and whites alike and told they are victims of white supremacy. I find it extraordinary to watch privileged blacks supporting the very system and bloodline networks behind the slave trade and parroting the same Cult-serving manipulative crap of their privileged white, often billionaire, associates. It is indeed not a race war but a class war and colour is just a diversion. Black Senator Cory Booker and black Congresswoman Maxine Waters, more residents of Nincompoopia, personify this. Once you tell people they are victims of someone else you devalue both their own responsibility for their plight and the power they have to impact on their reality and experience. Instead

we have: 'You are only in your situation because of whitey – turn on them and everything will change.' It won't change. Nothing changes in our lives unless *we* change it. Crucial to that is never seeing yourself as a victim and always as the creator of your reality. Life is a simple sequence of choice and consequence. Make different choices and you create different consequences. *You* have to make those choices – not Black Lives Matter, the Woke Mafia and anyone else that seeks to dictate your life. Who are they these Wokers, an emotional and psychological road traffic accident, to tell you what to do? Personal empowerment is the last thing the Cult and its Black Lives Matter want black people or anyone else to have. They claim to be defending the underdog while *creating* and perpetuating the underdog. The Cult's worst nightmare is human unity and if they are going to keep blacks, whites and every other race under economic servitude and control then the focus must be diverted from what they have in common to what they can be manipulated to believe divides them. Blacks have to be told that their poverty and plight is the fault of the white bloke living on the street in the same poverty and with the same plight they are experiencing. The difference is that your plight black people is due to him, a white supremacist with 'white privilege' living on the street. Don't unite as one human family against your mutual oppressors and suppressors – fight the oppressor with the white face who is as financially deprived as you are. The Cult knows that as its 'Covid' agenda moves into still new levels of extremism people are going to respond and it has been spreading the seeds of disunity everywhere to stop a united response to the evil that targets *all of us*.

Racist attacks on 'whiteness' are getting ever more outrageous and especially through the American Democratic Party which has an appalling history for anti-black racism. Barack Obama, Joe Biden, Hillary Clinton and Nancy Pelosi all eulogised about Senator Robert Byrd at his funeral in 2010 after a nearly 60-year career in Congress. Byrd was a brutal Ku Klux Klan racist and a violent abuser of Cathy O'Brien in MKUltra. He said he would never fight in the military 'with a negro by my side' and 'rather I should die a thousand times,

and see Old Glory trampled in the dirt never to rise again, than to see this beloved land of ours become degraded by race mongrels, a throwback to the blackest specimen from the wilds'. Biden called Byrd a 'very close friend and mentor'. These 'Woke' hypocrites are not anti-racist they are anti-poor and anti-people not of their perceived class. Here is an illustration of the scale of anti-white racism to which we have now descended. Seriously Woke and moronic *New York Times* contributor Damon Young described whiteness as a 'virus' that 'like other viruses will not die until there are no bodies left for it to infect'. He went on: '… the only way to stop it is to locate it, isolate it, extract it, and kill it.' Young can say that as a black man with no consequences when a white man saying the same in reverse would be facing a jail sentence. *That's* racism. We had super-Woke numbskull senators Tammy Duckworth and Mazie Hirono saying they would object to future Biden Cabinet appointments if he did not nominate more Asian Americans and Pacific Islanders. Never mind the ability of the candidate what do they look like? Duckworth said: 'I will vote for racial minorities and I will vote for LGBTQ, but anyone else I'm not voting for.' Appointing people on the grounds of race is illegal, but that was not a problem for this ludicrous pair. They were on-message and that's a free pass in any situation.

Critical race racism

White children are told at school they are intrinsically racist as they are taught the divisive 'critical race theory'. This claims that the law and legal institutions are inherently racist and that race is a socially constructed concept used by white people to further their economic and political interests at the expense of people of colour. White is a 'virus' as we've seen. Racial inequality results from 'social, economic, and legal differences that white people create between races to maintain white interests which leads to poverty and criminality in minority communities'. I must tell that to the white guy sleeping on the street. The principal of East Side Community School in New York sent white parents a manifesto that called on

them to become 'white traitors' and advocate for full 'white abolition'. These people are teaching your kids when they urgently need a psychiatrist. The 'school' included a chart with 'eight white identities' that ranged from 'white supremacist' to 'white abolition' and defined the behaviour white people must follow to end 'the regime of whiteness'. Woke blacks and their privileged white associates are acting exactly like the slave owners of old and Ku Klux Klan racists like Robert Byrd. They are too full of their own self-purity to see that, but it's true. Racism is not a body type; it's a state of mind that can manifest through any colour, creed or culture.

Another racial fraud is *'equity'*. Not equality of treatment and opportunity – equity. It's a term spun as equality when it means something very different. Equality in its true sense is a raising up while 'equity' is a race to the bottom. Everyone in the same level of poverty is 'equity'. Keep everyone down – that's equity. The Cult doesn't want anyone in the human family to be empowered and BLM leaders, like all these 'anti-racist' organisations, continue their privileged, pampered existence by perpetuating the perception of gathering racism. When is the last time you heard an 'anti-racist' or 'anti-Semitism' organisation say that acts of racism and discrimination have *fallen?* It's not in the interests of their fund-raising and power to influence and the same goes for the professional soccer anti-racism operation, Kick It Out. Two things confirmed that the Black Lives Matter riots in the summer of 2020 were Cult creations. One was that while anti-lockdown protests were condemned in this same period for 'transmitting 'Covid' the authorities supported mass gatherings of Black Lives Matter supporters. I even saw self-deluding people claiming to be doctors say the two types of protest were not the same. No – the non-existent 'Covid' was in favour of lockdowns and attacked those that protested against them while 'Covid' supported Black Lives Matter and kept well away from its protests. The whole thing was a joke and as lockdown protestors were arrested, often brutally, by reframed Face-Nappies we had the grotesque sight of police officers taking the knee to Black Lives Matter, a Cult-funded Marxist

organisation that supports violent riots and wants to destroy the nuclear family and white people.

He's not white? Shucks!

Woke obsession with race was on display again when ten people were shot dead in Boulder, Colorado, in March, 2021. Cult-owned Woke TV channels like CNN said the shooter appeared to be a white man and Wokers were on Twitter condemning 'violent white men' with the usual mantras. Then the shooter's name was released as Ahmad Al Aliwi Alissa, an anti-Trump Arab-American, and the sigh of disappointment could be heard five miles away. Never mind that ten people were dead and what that meant for their families. Race baiting was all that mattered to these sick Cult-serving people like Barack Obama who exploited the deaths to further divide America on racial grounds which is his job for the Cult. This is the man that 'racist' white Americans made the first black president of the United States and then gave him a second term. Not-very-bright Obama has become filthy rich on the back of that and today appears to have a big influence on the Biden administration. Even so he's still a downtrodden black man and a victim of white supremacy. This disingenuous fraud reveals the contempt he has for black people when he puts on a Deep South Alabama accent whenever he talks to them, no, *at* them.

Another BLM red flag was how the now fully-Woke (fully-Cult) and fully-virtue-signalled professional soccer authorities had their teams taking the knee before every match in support of Marxist Black Lives Matter. Soccer authorities and clubs displayed 'Black Lives Matter' on the players' shirts and flashed the name on electronic billboards around the pitch. Any fans that condemned what is a Freemasonic taking-the-knee ritual were widely condemned as you would expect from the Woke virtue-signallers of professional sport and the now fully-Woke media. We have reverse racism in which you are banned from criticising any race or culture except for white people for whom anything goes – say what you like, no problem. What has this got to do with racial harmony and

equality? We've had black supremacists from Black Lives Matter telling white people to fall to their knees in the street and apologise for their white supremacy. Black supremacists acting like white supremacist slave owners of the past couldn't breach their self-obsessed, race-obsessed sense of self-purity. Joe Biden appointed a race-obsessed black supremacist Kristen Clarke to head the Justice Department Civil Rights Division. Clarke claimed that blacks are endowed with 'greater mental, physical and spiritual abilities' than whites. If anyone reversed that statement they would be vilified. Clarke is on-message so no problem. She's never seen a black-white situation in which the black figure is anything but a virtuous victim and she heads the Civil Rights Division which should treat everyone the same or it isn't civil rights. Another perception of the Renegade Mind: If something or someone is part of the Cult agenda they will be supported by Woke governments and media no matter what. If they're not, they will be condemned and censored. It really is that simple and so racist Clarke prospers despite (make that because of) her racism.

The end of culture

Biden's administration is full of such racial, cultural and economic bias as the Cult requires the human family to be divided into warring factions. We are now seeing racially-segregated graduations and everything, but everything, is defined through the lens of perceived 'racism. We have 'racist' mathematics, 'racist' food and even 'racist' *plants*. World famous Kew Gardens in London said it was changing labels on plants and flowers to tell its pre-'Covid' more than two million visitors a year how racist they are. Kew director Richard Deverell said this was part of an effort to 'move quickly to decolonise collections' after they were approached by one Ajay Chhabra 'an actor with an insight into how sugar cane was linked to slavery'. They are *plants* you idiots. 'Decolonisation' in the Woke manual really means colonisation of society with its mentality and by extension colonisation by the Cult. We are witnessing a new Chinese-style 'Cultural Revolution' so essential to the success of all

Marxist takeovers. Our cultural past and traditions have to be swept away to allow a new culture to be built-back-better. Woke targeting of long-standing Western cultural pillars including historical monuments and cancelling of historical figures is what happened in the Mao revolution in China which 'purged remnants of capitalist and traditional elements from Chinese society' and installed Maoism as the dominant ideology'. For China see the Western world today and for 'dominant ideology' see Woke. Better still see Marxism or Maoism. The 'Covid' hoax has specifically sought to destroy the arts and all elements of Western culture from people meeting in a pub or restaurant to closing theatres, music venues, sports stadiums, places of worship and even banning *singing*. Destruction of Western society is also why criticism of any religion is banned except for Christianity which again is the dominant religion as white is the numerically-dominant race. Christianity may be fading rapidly, but its history and traditions are weaved through the fabric of Western society. Delete the pillars and other structures will follow until the whole thing collapses. I am not a Christian defending that religion when I say that. I have no religion. It's just a fact. To this end Christianity has itself been turned Woke to usher its own downfall and its ranks are awash with 'change agents' – knowing and unknowing – at every level including Pope Francis (*definitely* knowing) and the clueless Archbishop of Canterbury Justin Welby (possibly not, but who can be sure?). Woke seeks to coordinate attacks on Western culture, traditions, and ways of life through 'intersectionality' defined as 'the complex, cumulative way in which the effects of multiple forms of discrimination (such as racism, sexism, and classism) combine, overlap, or intersect especially in the experiences of marginalised individuals or groups'. Wade through the Orwellian Woke-speak and this means coordinating disparate groups in a common cause to overthrow freedom and liberal values.

The entire structure of public institutions has been infested with Woke – government at all levels, political parties, police, military, schools, universities, advertising, media and trade unions. This abomination has been achieved through the Cult web by appointing

Wokers to positions of power and battering non-Wokers into line through intimidation, isolation and threats to their job. Many have been fired in the wake of the empathy-deleted, vicious hostility of 'social justice' Wokers and the desire of gutless, spineless employers to virtue-signal their Wokeness. Corporations are filled with Wokers today, most notably those in Silicon Valley. Ironically at the top they are not Woke at all. They are only exploiting the mentality their Cult masters have created and funded to censor and enslave while the Wokers cheer them on until it's their turn. Thus the Woke 'liberal left' is an inversion of the traditional liberal left. Campaigning for justice on the grounds of power and wealth distribution has been replaced by campaigning for identity politics. The genuine traditional left would never have taken money from today's billionaire abusers of fairness and justice and nor would the billionaires have wanted to fund that genuine left. It would not have been in their interests to do so. The division of opinion in those days was between the haves and have nots. This all changed with Cult manipulated and funded identity politics. The division of opinion today is between Wokers and non-Wokers and not income brackets. Cult corporations and their billionaires may have taken wealth disparity to cataclysmic levels of injustice, but as long as they speak the language of Woke, hand out the dosh to the Woke network and censor the enemy they are 'one of us'. Billionaires who don't give a damn about injustice are laughing at them till their bellies hurt. Wokers are not even close to self-aware enough to see that. The transformed 'left' dynamic means that Wokers who drone on about 'social justice' are funded by billionaires that have destroyed social justice the world over. It's *why* they are billionaires.

The climate con

Nothing encapsulates what I have said more comprehensively than the hoax of human-caused global warming. I have detailed in my books over the years how Cult operatives and organisations were the pump-primers from the start of the climate con. A purpose-built vehicle for this is the Club of Rome established by the Cult in 1968

with the Rockefellers and Rothschilds centrally involved all along. Their gofer frontman Maurice Strong, a Canadian oil millionaire, hosted the Earth Summit in Rio de Janeiro, Brazil, in 1992 where the global 'green movement' really expanded in earnest under the guiding hand of the Cult. The Earth Summit established Agenda 21 through the Cult-created-and-owned United Nations to use the illusion of human-caused climate change to justify the transformation of global society to save the world from climate disaster. It is a No-Problem-Reaction-Solution sold through governments, media, schools and universities as whole generations have been terrified into believing that the world was going to end in their lifetimes unless what old people had inflicted upon them was stopped by a complete restructuring of how everything is done. Chill, kids, it's all a hoax. Such restructuring is precisely what the Cult agenda demands (purely by coincidence of course). Today this has been given the codename of the Great Reset which is only an updated term for Agenda 21 and its associated Agenda 2030. The latter, too, is administered through the UN and was voted into being by the General Assembly in 2015. Both 21 and 2030 seek centralised control of all resources and food right down to the raindrops falling on your own land. These are some of the demands of Agenda 21 established in 1992. See if you recognise this society emerging today:

- End national sovereignty
- State planning and management of all land resources, ecosystems, deserts, forests, mountains, oceans and fresh water; agriculture; rural development; biotechnology; and ensuring *'equity'*
- The state to 'define the role' of business and financial resources
- Abolition of private property
- 'Restructuring' the family unit (see BLM)
- Children raised by the state
- People told what their job will be
- Major restrictions on movement
- Creation of 'human settlement zones'

- Mass resettlement as people are forced to vacate land where they live
- Dumbing down education
- Mass global depopulation in pursuit of all the above

The United Nations was created as a Trojan horse for world government. With the climate con of critical importance to promoting that outcome you would expect the UN to be involved. Oh, it's involved all right. The UN is promoting Agenda 21 and Agenda 2030 justified by 'climate change' while also driving the climate hoax through its Intergovernmental Panel on Climate Change (IPCC), one of the world's most corrupt organisations. The IPCC has been lying ferociously and constantly since the day it opened its doors with the global media hanging unquestioningly on its every mendacious word. The Green movement is entirely Woke and has long lost its original environmental focus since it was co-opted by the Cult. An obsession with 'global warming' has deleted its values and scrambled its head. I experienced a small example of what I mean on a beautiful country walk that I have enjoyed several times a week for many years. The path merged into the fields and forests and you felt at one with the natural world. Then a 'Green' organisation, the Hampshire and Isle of Wight Wildlife Trust, took over part of the land and proceeded to cut down a large number of trees, including mature ones, to install a horrible big, bright steel 'this-is-ours-stay-out' fence that destroyed the whole atmosphere of this beautiful place. No one with a feel for nature would do that. Day after day I walked to the sound of chainsaws and a magnificent mature weeping willow tree that I so admired was cut down at the base of the trunk. When I challenged a Woke young girl in a green shirt (of course) about this vandalism she replied: 'It's a weeping willow – it will grow back.' This is what people are paying for when they donate to the Hampshire and Isle of Wight Wildlife Trust and many other 'green' organisations today. It is not the environmental movement that I knew and instead has become a support-system – as with Extinction Rebellion – for a very dark agenda.

Private jets for climate justice

The Cult-owned, Gates-funded, World Economic Forum and its founder Klaus Schwab were behind the emergence of Greta Thunberg to harness the young behind the climate agenda and she was invited to speak to the world at … the UN. Schwab published a book, *Covid-19: The Great Reset* in 2020 in which he used the 'Covid' hoax and the climate hoax to lay out a new society straight out of Agenda 21 and Agenda 2030. Bill Gates followed in early 2021 when he took time out from destroying the world to produce a book in his name about the way to save it. Gates flies across the world in private jets and admitted that 'I probably have one of the highest greenhouse gas footprints of anyone on the planet … my personal flying alone is gigantic.' He has also bid for the planet's biggest private jet operator. Other climate change saviours who fly in private jets include John Kerry, the US Special Presidential Envoy for Climate, and actor Leonardo DiCaprio, a 'UN Messenger of Peace with special focus on climate change'. These people are so full of bullshit they could corner the market in manure. We mustn't be sceptical, though, because the Gates book, *How to Avoid a Climate Disaster: The Solutions We Have and the Breakthroughs We Need*, is a genuine attempt to protect the world and not an obvious pile of excrement attributed to a mega-psychopath aimed at selling his masters' plans for humanity. The Gates book and the other shite-pile by Klaus Schwab could have been written by the same person and may well have been. Both use 'climate change' and 'Covid' as the excuses for their new society and by coincidence the Cult's World Economic Forum and Bill and Melinda Gates Foundation promote the climate hoax and hosted Event 201 which pre-empted with a 'simulation' the very 'coronavirus' hoax that would be simulated for real on humanity within weeks. The British 'royal' family is promoting the 'Reset' as you would expect through Prince 'climate change caused the war in Syria' Charles and his hapless son Prince William who said that we must 'reset our relationship with nature and our trajectory as a species' to avoid a climate disaster. Amazing how many promotors of the 'Covid' and 'climate change' control

systems are connected to Gates and the World Economic Forum. A 'study' in early 2021 claimed that carbon dioxide emissions must fall by the equivalent of a global lockdown roughly every two years for the next decade to save the planet. The 'study' appeared in the same period that the Schwab mob claimed in a video that lockdowns destroying the lives of billions are good because they make the earth 'quieter' with less 'ambient noise'. They took down the video amid a public backlash for such arrogant, empathy-deleted stupidity You see, however, where they are going with this. Corinne Le Quéré, a professor at the Tyndall Centre for Climate Change Research, University of East Anglia, was lead author of the climate lockdown study, and she writes for … the World Economic Forum. Gates calls in 'his' book for changing 'every aspect of the economy' (long-time Cult agenda) and for humans to eat synthetic 'meat' (predicted in my books) while cows and other farm animals are eliminated. Australian TV host and commentator Alan Jones described what carbon emission targets would mean for farm animals in Australia alone if emissions were reduced as demanded by 35 percent by 2030 and zero by 2050:

Well, let's take agriculture, the total emissions from agriculture are about 75 million tonnes of carbon dioxide, equivalent. Now reduce that by 35 percent and you have to come down to 50 million tonnes, I've done the maths. So if you take for example 1.5 million cows, you're going to have to reduce the herd by 525,000 [by] 2030, nine years, that's 58,000 cows a year. The beef herd's 30 million, reduce that by 35 percent, that's 10.5 million, which means 1.2 million cattle have to go every year between now and 2030. This is insanity!

There are 75 million sheep. Reduce that by 35 percent, that's 26 million sheep, that's almost 3 million a year. So under the Paris Agreement over 30 million beasts. dairy cows, cattle, pigs and sheep would go. More than 8,000 every minute of every hour for the next decade, do these people know what they're talking about?

Clearly they don't at the level of campaigners, politicians and administrators. The Cult *does* know; that's the outcome it wants. We are faced with not just a war on humanity. Animals and the natural world are being targeted and I have been saying since the 'Covid' hoax began that the plan eventually was to claim that the 'deadly virus' is able to jump from animals, including farm animals and

domestic pets, to humans. Just before this book went into production came this story: 'Russia registers world's first Covid-19 vaccine for cats & dogs as makers of Sputnik V warn pets & farm animals could spread virus'. The report said 'top scientists warned that the deadly pathogen could soon begin spreading through homes and farms' and 'the next stage is the infection of farm and domestic animals'. Know the outcome and you'll see the journey. Think what that would mean for animals and keep your eye on a term called zoonosis or zoonotic diseases which transmit between animals and humans. The Cult wants to break the connection between animals and people as it does between people and people. Farm animals fit with the Cult agenda to transform food from natural to synthetic.

The gas of life is killing us

There can be few greater examples of Cult inversion than the condemnation of carbon dioxide as a dangerous pollutant when it is the gas of life. Without it the natural world would be dead and so we would all be dead. We breathe in oxygen and breathe out carbon dioxide while plants produce oxygen and absorb carbon dioxide. It is a perfect symbiotic relationship that the Cult wants to dismantle for reasons I will come to in the final two chapters. Gates, Schwab, other Cult operatives and mindless repeaters, want the world to be 'carbon neutral' by at least 2050 and the earlier the better. 'Zero carbon' is the cry echoed by lunatics calling for 'Zero Covid' when we already have it. These carbon emission targets will deindustrialise the world in accordance with Cult plans – the post-industrial, post-democratic society – and with so-called renewables like solar and wind not coming even close to meeting human energy needs blackouts and cold are inevitable. Texans got the picture in the winter of 2021 when a snow storm stopped wind turbines and solar panels from working and the lights went down along with water which relies on electricity for its supply system. Gates wants everything to be powered by electricity to ensure that his masters have the kill switch to stop all human activity, movement, cooking, water and warmth any time they like. The climate lie is so

stupendously inverted that it claims we must urgently reduce carbon dioxide when we *don't have enough*.

Co2 in the atmosphere is a little above 400 parts per million when the optimum for plant growth is 2,000 ppm and when it falls anywhere near 150 ppm the natural world starts to die and so do we. It fell to as low as 280 ppm in an 1880 measurement in Hawaii and rose to 413 ppm in 2019 with industrialisation which is why the planet has become *greener* in the industrial period. How insane then that psychopathic madman Gates is not satisfied only with blocking the rise of Co2. He's funding technology to suck it out of the atmosphere. The reason why will become clear. The industrial era is not destroying the world through Co2 and has instead turned around a potentially disastrous ongoing fall in Co2. Greenpeace co-founder and scientist Patrick Moore walked away from Greenpeace in 1986 and has exposed the green movement for fear-mongering and lies. He said that 500 million years ago there was *17 times* more Co2 in the atmosphere than we have today and levels have been falling for hundreds of millions of years. In the last 150 million years Co2 levels in Earth's atmosphere had reduced by *90 percent*. Moore said that by the time humanity began to unlock carbon dioxide from fossil fuels we were at '38 seconds to midnight' and in that sense: 'Humans are [the Earth's] salvation.' Moore made the point that only half the Co2 emitted by fossil fuels stays in the atmosphere and we should remember that all pollution pouring from chimneys that we are told is carbon dioxide is in fact nothing of the kind. It's pollution. Carbon dioxide is an invisible gas.

William Happer, Professor of Physics at Princeton University and long-time government adviser on climate, has emphasised the Co2 deficiency for maximum growth and food production. Greenhouse growers don't add carbon dioxide for a bit of fun. He said that most of the warming in the last 100 years, after the earth emerged from the super-cold period of the 'Little Ice Age' into a natural warming cycle, was over by 1940. Happer said that a peak year for warming in 1988 can be explained by a 'monster El Nino' which is a natural and cyclical warming of the Pacific that has nothing to do with 'climate

change'. He said the effect of Co2 could be compared to painting a wall with red paint in that once two or three coats have been applied it didn't matter how much more you slapped on because the wall will not get much redder. Almost all the effect of the rise in Co2 has already happened, he said, and the volume in the atmosphere would now have to *double* to increase temperature by a single degree. Climate hoaxers know this and they have invented the most ridiculously complicated series of 'feedback' loops to try to overcome this rather devastating fact. You hear puppet Greta going on cluelessly about feedback loops and this is why.

The Sun affects temperature? No you *climate denier*

Some other nonsense to contemplate: Climate graphs show that rises in temperature do not follow rises in Co2 – *it's the other way round* with a lag between the two of some 800 years. If we go back 800 years from present time we hit the Medieval Warm Period when temperatures were higher than now without any industrialisation and this was followed by the Little Ice Age when temperatures plummeted. The world was still emerging from these centuries of serious cold when many climate records began which makes the ever-repeated line of the 'hottest year since records began' meaningless when you are not comparing like with like. The coldest period of the Little Ice Age corresponded with the lowest period of sunspot activity when the Sun was at its least active. Proper scientists will not be at all surprised by this when it confirms the obvious fact that earth temperature is affected by the scale of Sun activity and the energetic power that it subsequently emits; but when is the last time you heard a climate hoaxer talking about the Sun as a source of earth temperature?? Everything has to be focussed on Co2 which makes up just 0.117 percent of so-called greenhouse gases and only a fraction of even that is generated by human activity. The rest is natural. More than *90 percent* of those greenhouse gases are water vapour and clouds (Fig 9). Ban moisture I say. Have you noticed that the climate hoaxers no longer use the polar bear as their promotion image? That's because far from becoming extinct polar

bear communities are stable or thriving. Joe Bastardi, American meteorologist, weather forecaster and outspoken critic of the climate lie, documents in his book *The Climate Chronicles* how weather patterns and events claimed to be evidence of climate change have been happening since long before industrialisation: 'What happened before naturally is happening again, as is to be expected given the cyclical nature of the climate due to the design of the planet.' If you read the detailed background to the climate hoax in my other books you will shake your head and wonder how anyone could believe the crap which has spawned a multi-trillion dollar industry based on absolute garbage (see HIV causes AIDs and Sars-Cov-2 causes 'Covid-19'). Climate and 'Covid' have much in common given they have the same source. They both have the contradictory *everything* factor in which everything is explained by reference to them. It's hot – 'it's climate change'. It's cold – 'it's climate change'. I got a sniffle – 'it's Covid'. I haven't got a sniffle – 'it's Covid'. Not having a sniffle has to be a symptom of 'Covid'. Everything is and not having a sniffle is especially dangerous if you are a slow walker. For sheer audacity I offer you a Cambridge University 'study' that actually linked 'Covid' to 'climate change'. It had to happen eventually. They concluded that climate change played a role in 'Covid-19' spreading from animals to humans because … wait for it … I kid you not … *the two groups were forced closer together as populations grow*. Er, that's it. The whole foundation on which this depended was that 'Bats are the likely zoonotic origin of SARS-CoV-1 and SARS-CoV-2'. Well, they are not. They are nothing to do with it. Apart from bats not being the origin and therefore 'climate change' effects on bats being irrelevant I am in awe of their academic insight. Where would we be without them? Not where we are that's for sure.

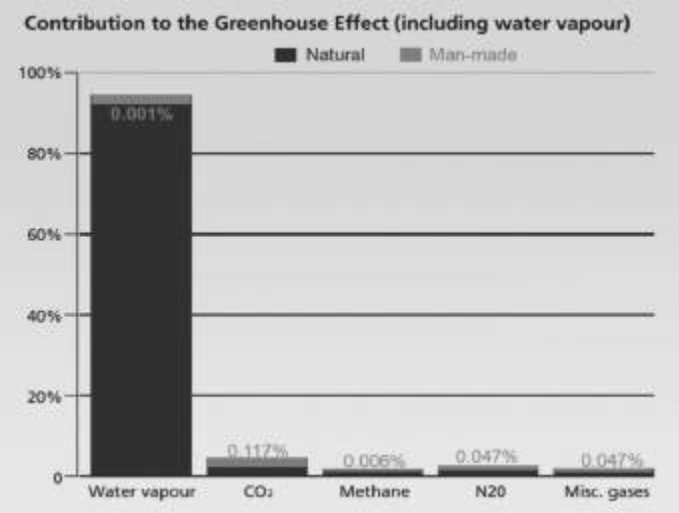

Figure 9: The idea that the gas of life is disastrously changing the climate is an insult to brain cell activity.

One other point about the weather is that climate modification is now well advanced and not every major weather event is natural – or earthquake come to that. I cover this subject at some length in other books. China is openly planning a rapid expansion of its weather modification programme which includes changing the climate in an area more than one and a half times the size of India. China used weather manipulation to ensure clear skies during the 2008 Olympics in Beijing. I have quoted from US military documents detailing how to employ weather manipulation as a weapon of war and they did that in the 1960s and 70s during the conflict in Vietnam with Operation Popeye manipulating monsoon rains for military purposes. Why would there be international treaties on weather modification if it wasn't possible? Of course it is. Weather is energetic information and it can be changed.

How was the climate hoax pulled off? See 'Covid'

If you can get billions to believe in a 'virus' that doesn't exist you can get them to believe in human-caused climate change that doesn't exist. Both are being used by the Cult to transform global society in the way it has long planned. Both hoaxes have been achieved in pretty much the same way. First you declare a lie is a fact. There's a

'virus' you call SARS-Cov-2 or humans are warming the planet with their behaviour. Next this becomes, via Cult networks, the foundation of government, academic and science policy and belief. Those who parrot the mantra are given big grants to produce research that confirms the narrative is true and ever more 'symptoms' are added to make the 'virus'/'climate change' sound even more scary. Scientists and researchers who challenge the narrative have their grants withdrawn and their careers destroyed. The media promote the lie as the unquestionable truth and censor those with an alternative view or evidence. A great percentage of the population believe what they are told as the lie becomes an everybody-knows-that and the believing-masses turn on those with a mind of their own. The technique has been used endlessly throughout human history. Wokers are the biggest promotors of the climate lie *and* 'Covid' fascism because their minds are owned by the Cult; their sense of self-righteous self-purity knows no bounds; and they exist in a bubble of reality in which facts are irrelevant and only get in the way of looking without seeing.

Running through all of this like veins in a blue cheese is control of information, which means control of perception, which means control of behaviour, which collectively means control of human society. The Cult owns the global media and Silicon Valley fascists for the simple reason that it *has* to. Without control of information it can't control perception and through that human society. Examine every facet of the Cult agenda and you will see that anything supporting its introduction is never censored while anything pushing back is always censored. I say again: Psychopaths that know why they are doing this must go before Nuremberg trials and those that follow their orders must trot along behind them into the same dock. 'I was just following orders' didn't work the first time and it must not work now. Nuremberg trials must be held all over the world before public juries for politicians, government officials, police, compliant doctors, scientists and virologists, and all Cult operatives such as Gates, Tedros, Fauci, Vallance, Whitty, Ferguson, Zuckerberg, Wojcicki, Brin, Page, Dorsey, the whole damn lot of

them – including, no *especially*, the psychopath psychologists. Without them and the brainless, gutless excuses for journalists that have repeated their lies, none of this could be happening. Nobody can be allowed to escape justice for the psychological and economic Armageddon they are all responsible for visiting upon the human race.

As for the compliant, unquestioning, swathes of humanity, and the self-obsessed, all-knowing ignorance of the Wokers … don't start me. God help their kids. God help their grandkids. God *help them*.

CHAPTER NINE

We must have it? So what is it?

Well I won't back down. No, I won't back down. You can stand me up at the Gates of Hell. But I won't back down
Tom Petty

I will now focus on the genetically-manipulating 'Covid vaccines' which do not meet this official definition of a vaccine by the US Centers for Disease Control (CDC): 'A product that stimulates a person's immune system to produce immunity to a specific disease, protecting the person from that disease.' On that basis 'Covid vaccines' are not a vaccine in that the makers don't even claim they stop infection or transmission.

They are instead part of a multi-levelled conspiracy to change the nature of the human body and what it means to be 'human' and to depopulate an enormous swathe of humanity. What I shall call Human 1.0 is on the cusp of becoming Human 2.0 and for very sinister reasons. Before I get to the 'Covid vaccine' in detail here's some background to vaccines in general. Government regulators do not test vaccines – the makers do – and the makers control which data is revealed and which isn't. Children in America are given 50 vaccine doses by age six and 69 by age 19 and the effect of the whole combined schedule has never been tested. Autoimmune diseases when the immune system attacks its own body have soared in the mass vaccine era and so has disease in general in children and the young. Why wouldn't this be the case when vaccines target the *immune system?* The US government gave Big Pharma drug

companies immunity from prosecution for vaccine death and injury in the 1986 National Childhood Vaccine Injury Act (NCVIA) and since then the government (taxpayer) has been funding compensation for the consequences of Big Pharma vaccines. The criminal and satanic drug giants can't lose and the vaccine schedule has increased dramatically since 1986 for this reason. There is no incentive to make vaccines safe and a big incentive to make money by introducing ever more. Even against a ridiculously high bar to prove vaccine liability, and with the government controlling the hearing in which it is being challenged for compensation, the vaccine court has so far paid out more than $4 billion. These are the vaccines we are told are safe and psychopaths like Zuckerberg censor posts saying otherwise. The immunity law was even justified by a ruling that vaccines by their nature were 'unavoidably unsafe'.

Check out the ingredients of vaccines and you will be shocked if you are new to this. *They put that in children's bodies?? What??* Try aluminium, a brain toxin connected to dementia, aborted foetal tissue and formaldehyde which is used to embalm corpses. World-renowned aluminium expert Christopher Exley had his research into the health effect of aluminium in vaccines shut down by Keele University in the UK when it began taking funding from the Bill and Melinda Gates Foundation. Research when diseases 'eradicated' by vaccines began to decline and you will find the fall began long *before* the vaccine was introduced. Sometimes the fall even plateaued after the vaccine. Diseases like scarlet fever for which there was no vaccine declined in the same way because of environmental and other factors. A perfect case in point is the polio vaccine. Polio began when lead arsenate was first sprayed as an insecticide and residues remained in food products. Spraying started in 1892 and the first US polio epidemic came in Vermont in 1894. The simple answer was to stop spraying, but Rockefeller-created Big Pharma had a better idea. Polio was decreed to be caused by the *poliovirus* which 'spreads from person to person and can infect a person's spinal cord'. Lead arsenate was replaced by the lethal DDT which had the same effect of causing paralysis by damaging the brain and central nervous

system. Polio plummeted when DDT was reduced and then banned, but the vaccine is still given the credit for something it didn't do. Today by far the biggest cause of polio is the vaccines promoted by Bill Gates. Vaccine justice campaigner Robert Kennedy Jr, son of assassinated (by the Cult) US Attorney General Robert Kennedy, wrote:

> In 2017, the World Health Organization (WHO) reluctantly admitted that the global explosion in polio is predominantly vaccine strain. The most frightening epidemics in Congo, Afghanistan, and the Philippines, are all linked to vaccines. In fact, by 2018, 70% of global polio cases were vaccine strain.

Vaccines make fortunes for Cult-owned Gates and Big Pharma while undermining the health and immune systems of the population. We had a glimpse of the mentality behind the Big Pharma cartel with a report on WION (World is One News), an international English language TV station based in India, which exposed the extraordinary behaviour of US drug company Pfizer over its 'Covid vaccine'. The WION report told how Pfizer had made fantastic demands of Argentina, Brazil and other countries in return for its 'vaccine'. These included immunity from prosecution, even for Pfizer negligence, government insurance to protect Pfizer from law suits and handing over as collateral sovereign assets of the country to include Argentina's bank reserves, military bases and embassy buildings. Pfizer demanded the same of Brazil in the form of waiving sovereignty of its assets abroad; exempting Pfizer from Brazilian laws; and giving Pfizer immunity from all civil liability. This is a 'vaccine' developed with government funding. Big Pharma is evil incarnate as a creation of the Cult and all must be handed tickets to Nuremberg.

Phantom 'vaccine' for a phantom 'disease'

I'll expose the 'Covid vaccine' fraud and then go on to the wider background of why the Cult has set out to 'vaccinate' every man, woman and child on the planet for an alleged 'new disease' with a survival rate of 99.77 percent (or more) even by the grotesquely-

manipulated figures of the World Health Organization and Johns Hopkins University. The 'infection' to 'death' ratio is 0.23 to 0.15 percent according to Stanford epidemiologist Dr John Ioannidis and while estimates vary the danger remains tiny. I say that if the truth be told the fake infection to fake death ratio is zero. Never mind all the evidence I have presented here and in *The Answer* that there is no 'virus' let us just focus for a moment on that death-rate figure of say 0.23 percent. The figure includes all those worldwide who have tested positive with a test not testing for the 'virus' and then died within 28 days or even longer of any other cause – *any other cause*. Now subtract all those illusory 'Covid' deaths on the global data sheets from the 0.23 percent. What do you think you would be left with? *Zero*. A vaccination has never been successfully developed for a so-called coronavirus. They have all failed at the animal testing stage when they caused hypersensitivity to what they were claiming to protect against and made the impact of a disease far worse. Cult-owned vaccine corporations got around that problem this time by bypassing animal trials, going straight to humans and making the length of the 'trials' before the public rollout as short as they could get away with. Normally it takes five to ten years or more to develop vaccines that still cause demonstrable harm to many people and that's without including the long-term effects that are never officially connected to the vaccination. 'Covid' non-vaccines have been officially produced and approved in a matter of months from a standing start and part of the reason is that (a) they were developed before the 'Covid' hoax began and (b) they are based on computer programs and not natural sources. Official non-trials were so short that government agencies gave *emergency*, not full, approval. 'Trials' were not even completed and full approval cannot be secured until they are. Public 'Covid vaccination' is actually a *continuation of the trial*. Drug company 'trials' are not scheduled to end until 2023 by which time a lot of people are going to be dead. Data on which government agencies gave this emergency approval was supplied by the Big Pharma corporations themselves in the form of Pfizer/BioNTech, AstraZeneca, Moderna, Johnson & Johnson, and

others, and this is the case with all vaccines. By its very nature *emergency* approval means drug companies do not have to prove that the 'vaccine' is 'safe and effective'. How could they with trials way short of complete? Government regulators only have to *believe* that they *could* be safe and effective. It is criminal manipulation to get products in circulation with no testing worth the name. Agencies giving that approval are infested with Big Pharma-connected place-people and they act in the interests of Big Pharma (the Cult) and not the public about whom they do not give a damn.

More human lab rats

'Covid vaccines' produced in record time by Pfizer/BioNTech and Moderna employ a technique *never approved before for use on humans*. They are known as mRNA 'vaccines' and inject a synthetic version of 'viral' mRNA or 'messenger RNA'. The key is in the term 'messenger'. The body works, or doesn't, on the basis of information messaging. Communications are constantly passing between and within the genetic system and the brain. Change those messages and you change the state of the body and even its very nature and you can change psychology and behaviour by the way the brain processes information. I think you are going to see significant changes in personality and perception of many people who have had the 'Covid vaccine' synthetic potions. Insider Aldous Huxley predicted the following in 1961 and mRNA 'vaccines' can be included in the term 'pharmacological methods':

> There will be, in the next generation or so, a pharmacological method of making people love their servitude, and producing dictatorship without tears, so to speak, producing a kind of painless concentration camp for entire societies, so that people will in fact have their own liberties taken away from them, but rather enjoy it, because they will be distracted from any desire to rebel by propaganda or brainwashing, or brainwashing enhanced by pharmacological methods. And this seems to be the final revolution.

Apologists claim that mRNA synthetic 'vaccines' don't change the DNA genetic blueprint because RNA does not affect DNA only the other way round. This is so disingenuous. A process called 'reverse

transcription' can convert RNA into DNA and be integrated into DNA in the cell nucleus. This was highlighted in December, 2020, by scientists at Harvard and Massachusetts Institute of Technology (MIT). Geneticists report that more than 40 percent of mammalian genomes results from reverse transcription. On the most basic level if messaging changes then that sequence must lead to changes in DNA which is receiving and transmitting those communications. How can introducing synthetic material into cells not change the cells where DNA is located? The process is known as transfection which is defined as 'a technique to insert foreign nucleic acid (DNA or RNA) into a cell, typically with the intention of altering the properties of the cell'. Researchers at the Sloan Kettering Institute in New York found that changes in messenger RNA can deactivate tumour-suppressing proteins and thereby promote cancer. This is what happens when you mess with messaging. 'Covid vaccine' maker Moderna was founded in 2010 by Canadian stem cell biologist Derrick J. Rossi after his breakthrough discovery in the field of transforming and reprogramming stem cells. These are neutral cells that can be programmed to become any cell including sperm cells. Moderna was therefore founded on the principle of genetic manipulation and has never produced any vaccine or drug before its genetically-manipulating synthetic 'Covid' shite. Look at the name – Mode-RNA or Modify-RNA. Another important point is that the US Supreme Court has ruled that genetically-modified DNA, or complementary DNA (cDNA) synthesized in the laboratory from messenger RNA, can be patented and owned. These psychopaths are doing this to the human body.

Cells replicate synthetic mRNA in the 'Covid vaccines' and in theory the body is tricked into making antigens which trigger antibodies to target the 'virus spike proteins' which as Dr Tom Cowan said have *never been seen*. Cut the crap and these 'vaccines' deliver *self-replicating* synthetic material to the cells with the effect of changing human DNA. The more of them you have the more that process is compounded while synthetic material is all the time self-replicating. 'Vaccine'-maker Moderna describes mRNA as 'like

software for the cell' and so they are messing with the body's software. What happens when you change the software in a computer? Everything changes. For this reason the Cult is preparing a production line of mRNA 'Covid vaccines' and a long list of excuses to use them as with all the 'variants' of a 'virus' never shown to exist. The plan is further to transfer the mRNA technique to other vaccines mostly given to children and young people. The cumulative consequences will be a transformation of human DNA through a constant infusion of synthetic genetic material which will kill many and change the rest. Now consider that governments that have given emergency approval for a vaccine that's not a vaccine; never been approved for humans before; had no testing worth the name; and the makers have been given immunity from prosecution for any deaths or adverse effects suffered by the public. The UK government awarded *permanent legal indemnity* to itself and its employees for harm done when a patient is being treated for 'Covid-19' or 'suspected Covid-19'. That is quite a thought when these are possible 'side-effects' from the 'vaccine' (they are not 'side', they are effects) listed by the US Food and Drug Administration:

Guillain-Barre syndrome; acute disseminated encephalomyelitis; transverse myelitis; encephalitis; myelitis; encephalomyelitis; meningoencephalitis; meningitis; encephalopathy; convulsions; seizures; stroke; narcolepsy; cataplexy; anaphylaxis; acute myocardial infarction (heart attack); myocarditis; pericarditis; autoimmune disease; death; implications for pregnancy, and birth outcomes; other acute demyelinating diseases; non anaphylactic allergy reactions; thrombocytopenia ; disseminated intravascular coagulation; venous thromboembolism; arthritis; arthralgia; joint pain; Kawasaki disease; multisystem inflammatory syndrome in children; vaccine enhanced disease. The latter is the way the 'vaccine' has the potential to make diseases far worse than they would otherwise be.

UK doctor and freedom campaigner Vernon Coleman described the conditions in this list as 'all unpleasant, most of them very serious, and you can't get more serious than death'. The thought that anyone at all has had the 'vaccine' in these circumstances is testament to the potential that humanity has for clueless, unquestioning, stupidity and for many that programmed stupidity has already been terminal.

An insider speaks

Dr Michael Yeadon is a former Vice President, head of research and Chief Scientific Adviser at vaccine giant Pfizer. Yeadon worked on the inside of Big Pharma, but that did not stop him becoming a vocal critic of 'Covid vaccines' and their potential for multiple harms, including infertility in women. By the spring of 2021 he went much further and even used the no, no, term 'conspiracy'. When you begin to see what is going on it is impossible not to do so. Yeadon spoke out in an interview with freedom campaigner James Delingpole and I mentioned earlier how he said that no one had samples of 'the virus'. He explained that the mRNA technique originated in the anti-cancer field and ways to turn on and off certain genes which could be advantageous if you wanted to stop cancer growing out of control. 'That's the origin of them. They are a very unusual application, really.' Yeadon said that treating a cancer patient with an aggressive procedure might be understandable if the alternative was dying, but it was quite another thing to use the same technique as a public health measure. Most people involved wouldn't catch the infectious agent you were vaccinating against and if they did they probably wouldn't die:

> If you are really using it as a public health measure you really want to as close as you can get to zero sides-effects … I find it odd that they chose techniques that were really cutting their teeth in the field of oncology and I'm worried that in using gene-based vaccines that have to be injected in the body and spread around the body, get taken up into some cells, and the regulators haven't quite told us which cells they get taken up into … you are going to be generating a wide range of responses … with multiple steps each of which could go well or badly.

I doubt the Cult intends it to go well. Yeadon said that you can put any gene you like into the body through the 'vaccine'. 'You can certainly give them a gene that would do them some harm if you wanted.' I was intrigued when he said that when used in the cancer field the technique could turn genes on and off. I explore this process in *The Answer* and with different genes having different functions you could create mayhem – physically and psychologically – if you turned the wrong ones on and the right ones off. I read reports of an experiment by researchers at the University of Washington's school of computer science and engineering in which they encoded DNA to infect computers. The body is itself a biological computer and if human DNA can inflict damage on a computer why can't the computer via synthetic material mess with the human body? It can. The Washington research team said it was possible to insert malicious malware into 'physical DNA strands' and corrupt the computer system of a gene sequencing machine as it 'reads gene letters and stores them as binary digits 0 and 1'. They concluded that hackers could one day use blood or spit samples to access computer systems and obtain sensitive data from police forensics labs or infect genome files. It is at this level of digital interaction that synthetic 'vaccines' need to be seen to get the full picture and that will become very clear later on. Michael Yeadon said it made no sense to give the 'vaccine' to younger people who were in no danger from the 'virus'. What was the benefit? It was all downside with potential effects:

> The fact that my government in what I thought was a civilised, rational country, is raining [the 'vaccine'] on people in their 30s and 40s, even my children in their 20s, they're getting letters and phone calls, I know this is not right and any of you doctors who are vaccinating you know it's not right, too. They are not at risk. They are not at risk from the disease, so you are now hoping that the side-effects are so rare that you get away with it. You don't give new technology … that you don't understand to 100 percent of the population.

Blood clot problems with the AstraZeneca 'vaccine' have been affecting younger people to emphasise the downside risks with no benefit. AstraZeneca's version, produced with Oxford University, does not use mRNA, but still gets its toxic cocktail inside cells where

it targets DNA. The Johnson & Johnson 'vaccine' which uses a similar technique has also produced blood clot effects to such an extent that the United States paused its use at one point. They are all 'gene therapy' (cell modification) procedures and not 'vaccines'. The truth is that once the content of these injections enter cells we have no idea what the effect will be. People can speculate and some can give very educated opinions and that's good. In the end, though, only the makers know what their potions are designed to do and even they won't know every last consequence. Michael Yeadon was scathing about doctors doing what they knew to be wrong. 'Everyone's mute', he said. Doctors in the NHS must know this was not right, coming into work and injecting people. 'I don't know how they sleep at night. I know I couldn't do it. I know that if I were in that position I'd have to quit.' He said he knew enough about toxicology to know this was not a good risk-benefit. Yeadon had spoken to seven or eight university professors and all except two would not speak out publicly. Their universities had a policy that no one said anything that countered the government and its medical advisors. They were afraid of losing their government grants. This is how intimidation has been used to silence the truth at every level of the system. I say silence, but these people could still speak out if they made that choice. Yeadon called them 'moral cowards' – 'This is about your children and grandchildren's lives and you have just buggered off and left it.'

'Variant' nonsense

Some of his most powerful comments related to the alleged 'variants' being used to instil more fear, justify more lockdowns, and introduce more 'vaccines'. He said government claims about 'variants' were nonsense. He had checked the alleged variant 'codes' and they were 99.7 percent identical to the 'original'. This was the human identity difference equivalent to putting a baseball cap on and off or wearing it the other way round. A 0.3 percent difference would make it impossible for that 'variant' to escape immunity from the 'original'. This made no sense of having new 'vaccines' for

'variants'. He said there would have to be at least a *30 percent* difference for that to be justified and even then he believed the immune system would still recognise what it was. Gates-funded 'variant modeller' and 'vaccine'-pusher John Edmunds might care to comment. Yeadon said drug companies were making new versions of the 'vaccine' as a 'top up' for 'variants'. Worse than that, he said, the 'regulators' around the world like the MHRA in the UK had got together and agreed that because 'vaccines' for 'variants' were so similar to the first 'vaccines' *they did not have to do safety studies*. How transparently sinister that is. This is when Yeadon said: 'There is a conspiracy here.' There was no need for another vaccine for 'variants' and yet we were told that there was and the country had shut its borders because of them. 'They are going into hundreds of millions of arms without passing 'go' or any regulator. Why did they do that? Why did they pick this method of making the vaccine?'

The reason had to be something bigger than that it seemed and 'it's not protection against the virus'. It's was a far bigger project that meant politicians and advisers were willing to do things and not do things that knowingly resulted in avoidable deaths – 'that's already happened when you think about lockdown and deprivation of health care for a year.' He spoke of people prepared to do something that results in the avoidable death of their fellow human beings and it not bother them. This is the penny-drop I have been working to get across for more than 30 years – the level of pure evil we are dealing with. Yeadon said his friends and associates could not believe there could be that much evil, but he reminded them of Stalin, Pol Pot and Hitler and of what Stalin had said: 'One death is a tragedy. A million? A statistic.' He could not think of a benign explanation for why you need top-up vaccines 'which I'm sure you don't' and for the regulators 'to just get out of the way and wave them through'. Why would the regulators do that when they were still wrestling with the dangers of the 'parent' vaccine? He was clearly shocked by what he had seen since the 'Covid' hoax began and now he was thinking the previously unthinkable:

If you wanted to depopulate a significant proportion of the world and to do it in a way that doesn't involve destruction of the environment with nuclear weapons, poisoning everyone with anthrax or something like that, and you wanted plausible deniability while you had a multi-year infectious disease crisis, I actually don't think you could come up with a better plan of work than seems to be in front of me. I can't say that's what they are going to do, but I can't think of a benign explanation why they are doing it.

He said he never thought that they would get rid of 99 percent of humans, but now he wondered. 'If you wanted to that this would be a hell of a way to do it – it would be unstoppable folks.' Yeadon had concluded that those who submitted to the 'vaccine' would be allowed to have some kind of normal life (but for how long?) while screws were tightened to coerce and mandate the last few percent. 'I think they'll put the rest of them in a prison camp. I wish I was wrong, but I don't think I am.' Other points he made included: There were no coronavirus vaccines then suddenly they all come along at the same time; we have no idea of the long term affect with trials so short; coercing or forcing people to have medical procedures is against the Nuremberg Code instigated when the Nazis did just that; people should at least delay having the 'vaccine'; a quick Internet search confirms that masks don't reduce respiratory viral transmission and 'the government knows that'; they have smashed civil society and they know that, too; two dozen peer-reviewed studies show no connection between lockdown and reducing deaths; he knew from personal friends the elite were still flying around and going on holiday while the public were locked down; the elite were not having the 'vaccines'. He was also asked if 'vaccines' could be made to target difference races. He said he didn't know, but the document by the Project for the New American Century in September, 2000, said developing 'advanced forms of biological warfare that can target *specific genotypes* may transform biological warfare from the realm of terror to a politically useful tool.' Oh, they're evil all right. Of that we can be *absolutely* sure.

Another cull of old people

We have seen from the CDC definition that the mRNA 'Covid vaccine' is not a vaccine and nor are the others that *claim* to reduce 'severity of symptoms' in *some* people, but not protect from infection or transmission. What about all the lies about returning to 'normal' if people were 'vaccinated'? If they are not claimed to stop infection and transmission of the alleged 'virus', how does anything change? This was all lies to manipulate people to take the jabs and we are seeing that now with masks and distancing still required for the 'vaccinated'. How did they think that elderly people with fragile health and immune responses were going to be affected by infusing their cells with synthetic material and other toxic substances? They *knew* that in the short and long term it would be devastating and fatal as the culling of the old that began with the first lockdowns was continued with the 'vaccine'. Death rates in care homes soared immediately residents began to be 'vaccinated' – infused with synthetic material. Brave and committed whistleblower nurses put their careers at risk by exposing this truth while the rest kept their heads down and their mouths shut to put their careers before those they are supposed to care for. A long-time American Certified Nursing Assistant who gave his name as James posted a video in which he described emotionally what happened in his care home when vaccination began. He said that during 2020 very few residents were sick with 'Covid' and no one died during the entire year; but shortly after the Pfizer mRNA injections 14 people died within two weeks and many others were near death. 'They're dropping like flies', he said. Residents who walked on their own before the shot could no longer and they had lost their ability to conduct an intelligent conversation. The home's management said the sudden deaths were caused by a 'super-spreader' of 'Covid-19'. Then how come, James asked, that residents who refused to take the injections were not sick? It was a case of inject the elderly with mRNA synthetic potions and blame their illness and death that followed on the 'virus'. James described what was happening in care homes as 'the greatest crime of genocide this country has ever seen'. Remember the NHS staff nurse from earlier who used the same

word ‘genocide’ for what was happening with the ‘vaccines’ and that it was an ‘act of human annihilation’. A UK care home whistleblower told a similar story to James about the effect of the ‘vaccine’ in deaths and ‘outbreaks’ of illness dubbed ‘Covid’ after getting the jab. She told how her care home management and staff had zealously imposed government regulations and no one was allowed to even question the official narrative let alone speak out against it. She said the NHS was even worse. Again we see the results of reframing. A worker at a local care home where I live said they had not had a single case of ‘Covid’ there for almost a year and when the residents were ‘vaccinated’ they had 19 positive cases in two weeks with eight dying.

It’s not the ‘vaccine’ – honest

The obvious cause and effect was being ignored by the media and most of the public. Australia’s health minister Greg Hunt (a former head of strategy at the World Economic Forum) was admitted to hospital after he had the ‘vaccine’. He was suffering according to reports from the skin infection ‘cellulitis’ and it must have been a severe case to have warranted days in hospital. Immediately the authorities said this was nothing to do with the ‘vaccine’ when an effect of some vaccines is a ‘cellulitis-like reaction’. We had families of perfectly healthy old people who died after the ‘vaccine’ saying that if only they had been given the ‘vaccine’ earlier they would still be alive. As a numbskull rating that is off the chart. A father of four ‘died of Covid’ at aged 48 when he was taken ill two days after having the ‘vaccine’. The man, a health administrator, had been ‘shielding during the pandemic’ and had ‘not really left the house’ until he went for the ‘vaccine’. Having the ‘vaccine’ and then falling ill and dying does not seem to have qualified as a possible cause and effect and ‘Covid-19’ went on his death certificate. His family said they had no idea how he ‘caught the virus’. A family member said: ‘Tragically, it could be that going for a vaccination ultimately led to him catching Covid …The sad truth is that they are never going to know where it came from.’ The family warned people to remember

that the virus still existed and was 'very real'. So was their stupidity. Nurses and doctors who had the first round of the 'vaccine' were collapsing, dying and ending up in a hospital bed while they or their grieving relatives were saying they'd still have the 'vaccine' again despite what happened. I kid you not. You mean if your husband returned from the dead he'd have the same 'vaccine' again that killed him??

Doctors at the VCU Medical Center in Richmond, Virginia, said the Johnson & Johnson 'vaccine' was to blame for a man's skin peeling off. Patient Richard Terrell said: 'It all just happened so fast. My skin peeled off. It's still coming off on my hands now.' He said it was stinging, burning and itching and when he bent his arms and legs it was very painful with 'the skin swollen and rubbing against itself'. Pfizer/BioNTech and Moderna vaccines use mRNA to change the cell while the Johnson & Johnson version uses DNA in a process similar to AstraZeneca's technique. Johnson & Johnson and AstraZeneca have both had their 'vaccines' paused by many countries after causing serious blood problems. Terrell's doctor Fnu Nutan said he could have died if he hadn't got medical attention. It sounds terrible so what did Nutan and Terrell say about the 'vaccine' now? Oh, they still recommend that people have it. A nurse in a hospital bed 40 minutes after the vaccination and unable to swallow due to throat swelling was told by a doctor that he lost mobility in his arm for 36 hours following the vaccination. What did he say to the ailing nurse? 'Good for you for getting the vaccination.' We are dealing with a serious form of cognitive dissonance madness in both public and medical staff. There is a remarkable correlation between those having the 'vaccine' and trumpeting the fact and suffering bad happenings shortly afterwards. Witold Rogiewicz, a Polish doctor, made a video of his 'vaccination' and ridiculed those who were questioning its safety and the intentions of Bill Gates: 'Vaccinate yourself to protect yourself, your loved ones, friends and also patients. And to mention quickly I have info for anti-vaxxers and anti-Coviders if you want to contact Bill Gates you can do this through me.' He further ridiculed the dangers of 5G. Days later he

was dead, but naturally the vaccination wasn't mentioned in the verdict of 'heart attack'.

Lies, lies and more lies

So many members of the human race have slipped into extreme states of insanity and unfortunately they include reframed doctors and nursing staff. Having a 'vaccine' and dying within minutes or hours is not considered a valid connection while death from any cause within 28 days or longer of a positive test with a test not testing for the 'virus' means 'Covid-19' goes on the death certificate. How could that 'vaccine'-death connection not have been made except by calculated deceit? US figures in the initial rollout period to February 12th, 2020, revealed that a third of the deaths reported to the CDC after 'Covid vaccines' happened within 48 hours. Five men in the UK suffered an 'extremely rare' blood clot problem after having the AstraZeneca 'vaccine', but no causal link was established said the Gates-funded Medicines and Healthcare products Regulatory Agency (MHRA) which had given the 'vaccine' emergency approval to be used. Former Pfizer executive Dr Michael Yeadon explained in his interview how the procedures could cause blood coagulation and clots. People who should have been at no risk were dying from blood clots in the brain and he said he had heard from medical doctor friends that people were suffering from skin bleeding and massive headaches. The AstraZeneca 'shot' was stopped by some 20 countries over the blood clotting issue and still the corrupt MHRA, the European Medicines Agency (EMA) and the World Health Organization said that it should continue to be given even though the EMA admitted that it 'still cannot rule out definitively' a link between blood clotting and the 'vaccine'. Later Marco Cavaleri, head of EMA vaccine strategy, said there was indeed a clear link between the 'vaccine' and thrombosis, but they didn't know why. So much for the trials showing the 'vaccine' is safe. Blood clots were affecting younger people who would be under virtually no danger from 'Covid' even if it existed which makes it all the more stupid and sinister.

The British government responded to public alarm by wheeling out June Raine, the terrifyingly weak infant school headmistress sound-alike who heads the UK MHRA drug 'regulator'. The idea that she would stand up to Big Pharma and government pressure is laughable and she told us that all was well in the same way that she did when allowing untested, never-used-on-humans-before, genetically-manipulating 'vaccines' to be exposed to the public in the first place. Mass lying is the new normal of the 'Covid' era. The MHRA later said 30 cases of rare blood clots had by then been connected with the AstraZeneca 'vaccine' (that means a lot more in reality) while stressing that the benefits of the jab in preventing 'Covid-19' outweighed any risks. A more ridiculous and disingenuous statement with callous disregard for human health it is hard to contemplate. Immediately after the mendacious 'all-clears' two hospital workers in Denmark experienced blood clots and cerebral haemorrhaging following the AstraZeneca jab and one died. Top Norwegian health official Pål Andre Holme said the 'vaccine' was the only common factor: 'There is nothing in the patient history of these individuals that can give such a powerful immune response … I am confident that the antibodies that we have found are the cause, and I see no other explanation than it being the vaccine which triggers it.' Strokes, a clot or bleed in the brain, were clearly associated with the 'vaccine' from word of mouth and whistleblower reports. Similar consequences followed with all these 'vaccines' that we were told were so safe and as the numbers grew by the day it was clear we were witnessing human carnage.

Learning the hard way

A woman interviewed by UKColumn told how her husband suffered dramatic health effects after the vaccine when he'd been in good health all his life. He went from being a little unwell to losing all feeling in his legs and experiencing 'excruciating pain'. Misdiagnosis followed twice at Accident and Emergency (an 'allergy' and 'sciatica') before he was admitted to a neurology ward where doctors said his serious condition had been caused by the

'vaccine'. Another seven 'vaccinated' people were apparently being treated on the same ward for similar symptoms. The woman said he had the 'vaccine' because they believed media claims that it was safe. 'I didn't think the government would give out a vaccine that does this to somebody; I believed they would be bringing out a vaccination that would be safe.' What a tragic way to learn that lesson. Another woman posted that her husband was transporting stroke patients to hospital on almost every shift and when he asked them if they had been 'vaccinated' for 'Covid' they all replied 'yes'. One had a 'massive brain bleed' the day after his second dose. She said her husband reported the 'just been vaccinated' information every time to doctors in A and E only for them to ignore it, make no notes and appear annoyed that it was even mentioned. This particular report cannot be verified, but it expresses a common theme that confirms the monumental underreporting of 'vaccine' consequences. Interestingly as the 'vaccines' and their brain blood clot/stroke consequences began to emerge the UK National Health Service began a publicity campaign telling the public what to do in the event of a stroke. A Scottish NHS staff nurse who quit in disgust in March, 2021, said:

I have seen traumatic injuries from the vaccine, they're not getting reported to the yellow card [adverse reaction] scheme, they're treating the symptoms, not asking why, why it's happening. It's just treating the symptoms and when you speak about it you're dismissed like you're crazy, I'm not crazy, I'm not crazy because every other colleague I've spoken to is terrified to speak out, they've had enough.

Videos appeared on the Internet of people uncontrollably shaking after the 'vaccine' with no control over muscles, limbs and even their face. A Scottish mother broke out in a severe rash all over her body almost immediately after she was given the AstraZeneca 'vaccine'. The pictures were horrific. Leigh King, a 41-year-old hairdresser from Lanarkshire said: 'Never in my life was I prepared for what I was about to experience … My skin was so sore and constantly hot … I have never felt pain like this …' But don't you worry, the 'vaccine' is perfectly safe. Then there has been the effect on medical

staff who have been pressured to have the 'vaccine' by psychopathic 'health' authorities and government. A London hospital consultant who gave the name K. Polyakova wrote this to the *British Medical Journal* or *BMJ*:

> I am currently struggling with … the failure to report the reality of the morbidity caused by our current vaccination program within the health service and staff population. The levels of sickness after vaccination is unprecedented and staff are getting very sick and some with neurological symptoms which is having a huge impact on the health service function. Even the young and healthy are off for days, some for weeks, and some requiring medical treatment. Whole teams are being taken out as they went to get vaccinated together.
>
> Mandatory vaccination in this instance is stupid, unethical and irresponsible when it comes to protecting our staff and public health. We are in the voluntary phase of vaccination, and encouraging staff to take an unlicensed product that is impacting on their immediate health … it is clearly stated that these vaccine products do not offer immunity or stop transmission. In which case why are we doing it?

Not to protect health that's for sure. Medical workers are lauded by governments for agenda reasons when they couldn't give a toss about them any more than they can for the population in general. Schools across America faced the same situation as they closed due to the high number of teachers and other staff with bad reactions to the Pfizer/BioNTech, Moderna, and Johnson & Johnson 'Covid vaccines' all of which were linked to death and serious adverse effects. The *BMJ* took down the consultant's comments pretty quickly on the grounds that they were being used to spread 'disinformation'. They were exposing the truth about the 'vaccine' was the real reason. The cover-up is breathtaking.

Hiding the evidence

The scale of the 'vaccine' death cover-up worldwide can be confirmed by comparing official figures with the personal experience of the public. I heard of many people in my community who died immediately or soon after the vaccine that would never appear in the media or even likely on the official totals of 'vaccine' fatalities and adverse reactions when only about ten percent are estimated to be

reported and I have seen some estimates as low as one percent in a Harvard study. In the UK alone by April 29th, 2021, some 757,654 adverse reactions had been officially reported from the Pfizer/BioNTech, Oxford/AstraZeneca and Moderna 'vaccines' with more than a thousand deaths linked to jabs and that means an estimated ten times this number in reality from a ten percent reporting rate percentage. That's seven million adverse reactions and 10,000 potential deaths and a one percent reporting rate would be ten times *those* figures. In 1976 the US government pulled the swine flu vaccine after *53* deaths. The UK data included a combined 10,000 eye disorders from the 'Covid vaccines' with more than 750 suffering visual impairment or blindness and again multiply by the estimated reporting percentages. As 'Covid cases' officially fell hospitals virtually empty during the 'Covid crisis' began to fill up with a range of other problems in the wake of the 'vaccine' rollout. The numbers across America have also been catastrophic. Deaths linked to *all* types of vaccine increased by *6,000 percent* in the first quarter of 2021 compared with 2020. A 39-year-old woman from Ogden, Utah, died four days after receiving a second dose of Moderna's 'Covid vaccine' when her liver, heart and kidneys all failed despite the fact that she had no known medical issues or conditions. Her family sought an autopsy, but Dr Erik Christensen, Utah's chief medical examiner, said proving vaccine injury as a cause of death almost never happened. He could think of only one instance where an autopsy would name a vaccine as the official cause of death and that would be anaphylaxis where someone received a vaccine and died almost instantaneously. 'Short of that, it would be difficult for us to definitively say this is the vaccine,' Christensen said. If that is true this must be added to the estimated ten percent (or far less) reporting rate of vaccine deaths and serious reactions and the conclusion can only be that vaccine deaths and serious reactions – including these 'Covid' potions' – are phenomenally understated in official figures. The same story can be found everywhere. Endless accounts of deaths and serious reactions among the public, medical

and care home staff while official figures did not even begin to reflect this.

Professional script-reader Dr David Williams, a 'top public-health official' in Ontario, Canada, insulted our intelligence by claiming only four serious adverse reactions and no deaths from the more than 380,000 vaccine doses then given. This bore no resemblance to what people knew had happened in their owns circles and we had Dirk Huyer in charge of getting millions vaccinated in Ontario while at the same time he was Chief Coroner for the province investigating causes of death including possible death from the vaccine. An aide said he had stepped back from investigating deaths, but evidence indicated otherwise. Rosemary Frei, who secured a Master of Science degree in molecular biology at the Faculty of Medicine at Canada's University of Calgary before turning to investigative journalism, was one who could see that official figures for 'vaccine' deaths and reactions made no sense. She said that doctors seldom reported adverse events and when people got really sick or died after getting a vaccination they would attribute that to anything except the vaccines. It had been that way for years and anyone who wondered aloud whether the 'Covid vaccines' or other shots cause harm is immediately branded as 'anti-vax' and 'anti-science'. This was 'career-threatening' for health professionals. Then there was the huge pressure to support the push to 'vaccinate' billions in the quickest time possible. Frei said:

> So that's where we're at today. More than half a million vaccine doses have been given to people in Ontario alone. The rush is on to vaccinate all 15 million of us in the province by September. And the mainstream media are screaming for this to be sped up even more. That all adds up to only a very slim likelihood that we're going to be told the truth by officials about how many people are getting sick or dying from the vaccines.

What is true of Ontario is true of everywhere.

They KNEW – and still did it

The authorities knew what was going to happen with multiple deaths and adverse reactions. The UK government's Gates-funded

and Big Pharma-dominated Medicines and Healthcare products Regulatory Agency (MHRA) hired a company to employ AI in compiling the projected reactions to the 'vaccine' that would otherwise be uncountable. The request for applications said: 'The MHRA urgently seeks an Artificial Intelligence (AI) software tool to process the expected high volume of Covid-19 vaccine Adverse Drug Reaction …' This was from the agency, headed by the disingenuous June Raine, that gave the 'vaccines' emergency approval and the company was hired before the first shot was given. 'We are going to kill and maim you – is that okay?' 'Oh, yes, perfectly fine – I'm very grateful, thank you, doctor.' The range of 'Covid vaccine' adverse reactions goes on for page after page in the MHRA criminally underreported 'Yellow Card' system and includes affects to eyes, ears, skin, digestion, blood and so on. Raine's MHRA amazingly claimed that the 'overall safety experience … is so far as expected from the clinical trials'. The death, serious adverse effects, deafness and blindness were *expected?* When did they ever mention that? If these human tragedies were expected then those that gave approval for the use of these 'vaccines' must be guilty of crimes against humanity including murder – a definition of which is 'killing a person with malice aforethought or with recklessness manifesting extreme indifference to the value of human life.' People involved at the MHRA, the CDC in America and their equivalent around the world must go before Nuremberg trials to answer for their callous inhumanity. We are only talking here about the immediate effects of the 'vaccine'. The longer-term impact of the DNA synthetic manipulation is the main reason they are so hysterically desperate to inoculate the entire global population in the shortest possible time.

Africa and the developing world are a major focus for the 'vaccine' depopulation agenda and a mass vaccination sales-pitch is underway thanks to caring people like the Rockefellers and other Cult assets. The Rockefeller Foundation, which pre-empted the 'Covid pandemic' in a document published in 2010 that 'predicted' what happened a decade later, announced an initial $34.95 million grant in February, 2021, 'to ensure more equitable access to Covid-19

testing and vaccines' among other things in Africa in collaboration with '24 organizations, businesses, and government agencies'. The pan-Africa initiative would focus on 10 countries: Burkina Faso, Ethiopia, Ghana, Kenya, Nigeria, Rwanda, South Africa, Tanzania, Uganda, and Zambia'. Rajiv Shah, President of the Rockefeller Foundation and former administrator of CIA-controlled USAID, said that if Africa was not mass-vaccinated (to change the DNA of its people) it was a 'threat to all of humanity' and not fair on Africans. When someone from the Rockefeller Foundation says they want to do something to help poor and deprived people and countries it is time for a belly-laugh. They are doing this out of the goodness of their 'heart' because 'vaccinating' the entire global population is what the 'Covid' hoax set out to achieve. Official 'decolonisation' of Africa by the Cult was merely a prelude to financial colonisation on the road to a return to physical colonisation. The 'vaccine' is vital to that and the sudden and convenient death of the 'Covid' sceptic president of Tanzania can be seen in its true light. A lot of people in Africa are aware that this is another form of colonisation and exploitation and they need to stand their ground.

The 'vaccine is working' scam

A potential problem for the Cult was that the 'vaccine' is meant to change human DNA and body messaging and not to protect anyone from a 'virus' never shown to exist. The vaccine couldn't work because it was not designed to work and how could they make it *appear* to be working so that more people would have it? This was overcome by lowering the amplification rate of the PCR test to produce fewer 'cases' and therefore fewer 'deaths'. Some of us had been pointing out since March, 2020, that the amplification rate of the test not testing for the 'virus' had been made artificially high to generate positive tests which they could call 'cases' to justify lockdowns. The World Health Organization recommended an absurdly high 45 amplification cycles to ensure the high positives required by the Cult and then remained silent on the issue until January 20th, 2021 – Biden's Inauguration Day. This was when the

'vaccinations' were seriously underway and on that day the WHO recommended after discussions with America's CDC that laboratories *lowered their testing amplification*. Dr David Samadi, a certified urologist and health writer, said the WHO was encouraging all labs to reduce their cycle count for PCR tests. He said the current cycle was much too high and was 'resulting in any particle being declared a positive case'. Even one mainstream news report I saw said this meant the number of 'Covid' infections may have been 'dramatically inflated'. Oh, just a little bit. The CDC in America issued new guidance to laboratories in April, 2021, to use 28 cycles *but only for 'vaccinated' people*. The timing of the CDC/WHO interventions were cynically designed to make it appear the 'vaccines' were responsible for falling cases and deaths when the real reason can be seen in the following examples. New York's state lab, the Wadsworth Center, identified 872 positive tests in July, 2020, based on a threshold of 40 cycles. When the figure was lowered to 35 cycles *43 percent* of the 872 were no longer 'positives'. At 30 cycles the figure was 63 percent. A Massachusetts lab found that between *85 to 90 percent* of people who tested positive in July with a cycle threshold of 40 would be negative at 30 cycles, Ashish Jha, MD, director of the Harvard Global Health Institute, said: 'I'm really shocked that it could be that high … Boy, does it really change the way we need to be thinking about testing.' I'm shocked that I could see the obvious in the spring of 2020, with no medical background, and most medical professionals still haven't worked it out. No, that's not shocking – it's terrifying.

Three weeks after the WHO directive to lower PCR cycles the London *Daily Mail* ran this headline: 'Why ARE Covid cases plummeting? New infections have fallen 45% in the US and 30% globally in the past 3 weeks but experts say vaccine is NOT the main driver because only 8% of Americans and 13% of people worldwide have received their first dose.' They acknowledged that the drop could not be attributed to the 'vaccine', but soon this morphed throughout the media into the 'vaccine' has caused cases and deaths to fall when it was the PCR threshold. In December, 2020, there was

chaos at English Channel ports with truck drivers needing negative 'Covid' tests before they could board a ferry home for Christmas. The government wanted to remove the backlog as fast as possible and they brought in troops to do the 'testing'. Out of 1,600 drivers just *36* tested positive and the rest were given the all clear to cross the Channel. I guess the authorities thought that 36 was the least they could get away with without the unquestioning catching on. The amplification trick which most people believed in the absence of information in the mainstream applied more pressure on those refusing the 'vaccine' to succumb when it 'obviously worked'. The truth was the exact opposite with deaths in care homes soaring with the 'vaccine' and in Israel the term used was 'skyrocket'. A re-analysis of published data from the Israeli Health Ministry led by Dr Hervé Seligmann at the Medicine Emerging Infectious and Tropical Diseases at Aix-Marseille University found that Pfizer's 'Covid vaccine' killed 'about 40 times more [elderly] people than the disease itself would have killed' during a five-week vaccination period and *260 times* more younger people than would have died from the 'virus' even according to the manipulated 'virus' figures. Dr Seligmann and his co-study author, Haim Yativ, declared after reviewing the Israeli 'vaccine' death data: 'This is a new Holocaust.'

Then, in mid-April, 2021, after vast numbers of people worldwide had been 'vaccinated', the story changed with clear coordination. The UK government began to prepare the ground for more future lockdowns when Nuremberg-destined Boris Johnson told yet another whopper. He said that cases had fallen because of *lockdowns* not 'vaccines'. Lockdowns are irrelevant when *there is no 'virus'* and the test and fraudulent death certificates are deciding the number of 'cases' and 'deaths'. Study after study has shown that lockdowns don't work and instead kill and psychologically destroy people. Meanwhile in the United States Anthony Fauci and Rochelle Walensky, the ultra-Zionist head of the CDC, peddled the same line. More lockdown was the answer and not the 'vaccine', a line repeated on cue by the moron that is Canadian Prime Minister Justin Trudeau. Why all the hysteria to get everyone 'vaccinated' if lockdowns and

not 'vaccines' made the difference? None of it makes sense on the face of it. Oh, but it does. The Cult wants lockdowns *and* the 'vaccine' and if the 'vaccine' is allowed to be seen as the total answer lockdowns would no longer be justified when there are still livelihoods to destroy. 'Variants' and renewed upward manipulation of PCR amplification are planned to instigate never-ending lockdown *and* more 'vaccines'.

You *must* have it – we're desperate

Israel, where the Jewish and Arab population are ruled by the Sabbatian Cult, was the front-runner in imposing the DNA-manipulating 'vaccine' on its people to such an extent that Jewish refusers began to liken what was happening to the early years of Nazi Germany. This would seem to be a fantastic claim. Why would a government of Jewish people be acting like the Nazis did? If you realise that the Sabbatian Cult was behind the Nazis and that Sabbatians hate Jews the pieces start to fit and the question of why a 'Jewish' government would treat Jews with such callous disregard for their lives and freedom finds an answer. Those controlling the government of Israel *aren't Jewish* – they're Sabbatian. Israeli lawyer Tamir Turgal was one who made the Nazi comparison in comments to German lawyer Reiner Fuellmich who is leading a class action lawsuit against the psychopaths for crimes against humanity. Turgal described how the Israeli government was vaccinating children and pregnant women on the basis that there was no evidence that this was dangerous when they had no evidence that it *wasn't* dangerous either. They just had no evidence. This was medical experimentation and Turgal said this breached the Nuremberg Code about medical experimentation and procedures requiring informed consent and choice. Think about that. A Nuremberg Code developed because of Nazi experimentation on Jews and others in concentration camps by people like the evil-beyond-belief Josef Mengele is being breached by the *Israeli* government; but when you know that it's a *Sabbatian* government along with its intelligence and military agencies like Mossad, Shin Bet and the Israeli Defense Forces, and that Sabbatians

were the force behind the Nazis, the kaleidoscope comes into focus. What have we come to when Israeli Jews are suing their government for violating the Nuremberg Code by essentially making Israelis subject to a medical experiment using the controversial 'vaccines'? It's a shocker that this has to be done in the light of what happened in Nazi Germany. The Anshe Ha-Emet, or 'People of the Truth', made up of Israeli doctors, lawyers, campaigners and public, have launched a lawsuit with the International Criminal Court. It says:

> When the heads of the Ministry of Health as well as the prime minister presented the vaccine in Israel and began the vaccination of Israeli residents, the vaccinated were not advised, that, in practice, they are taking part in a medical experiment and that their consent is required for this under the Nuremberg Code.

The irony is unbelievable, but easily explained in one word: Sabbatians. The foundation of Israeli 'Covid' apartheid is the 'green pass' or 'green passport' which allows Jews and Arabs who have had the DNA-manipulating 'vaccine' to go about their lives – to work, fly, travel in general, go to shopping malls, bars, restaurants, hotels, concerts, gyms, swimming pools, theatres and sports venues, while non-'vaccinated' are banned from all those places and activities. Israelis have likened the 'green pass' to the yellow stars that Jews in Nazi Germany were forced to wear – the same as the yellow stickers that a branch of UK supermarket chain Morrisons told exempt mask-wears they had to display when shopping. How very sensitive. The Israeli system is blatant South African-style apartheid on the basis of compliance or non-compliance to fascism rather than colour of the skin. How appropriate that the Sabbatian Israeli government was so close to the pre-Mandela apartheid regime in Pretoria. The Sabbatian-instigated 'vaccine passport' in Israel is planned for everywhere. Sabbatians struck a deal with Pfizer that allowed them to lead the way in the percentage of a national population infused with synthetic material and the result was catastrophic. Israeli freedom activist Shai Dannon told me how chairs were appearing on beaches that said 'vaccinated only'. Health Minister Yuli Edelstein said that anyone unwilling or unable to get

the jabs that 'confer immunity' will be 'left behind'. The man's a liar. Not even the makers claim the 'vaccines' confer immunity. When you see those figures of 'vaccine' deaths these psychopaths were saying that you must take the chance the 'vaccine' will kill you or maim you while knowing it will change your DNA or lockdown for you will be permanent. That's fascism. The Israeli parliament passed a law to allow personal information of the non-vaccinated to be shared with local and national authorities for three months. This was claimed by its supporters to be a way to 'encourage' people to be vaccinated. Hadas Ziv from Physicians for Human Rights described this as a 'draconian law which crushed medical ethics and the patient rights'. But that's the idea, the Sabbatians would reply.

Your papers, please

Sabbatian Israel was leading what has been planned all along to be a global 'vaccine pass' called a 'green passport' without which you would remain in permanent lockdown restriction and unable to do anything. This is how badly – *desperately* – the Cult is to get everyone 'vaccinated'. The term and colour 'green' was not by chance and related to the psychology of fusing the perception of the green climate hoax with the 'Covid' hoax and how the 'solution' to both is the same Great Reset. Lying politicians, health officials and psychologists denied there were any plans for mandatory vaccinations or restrictions based on vaccinations, but they knew that was exactly what was meant to happen with governments of all countries reaching agreements to enforce a global system. 'Free' Denmark and 'free' Sweden unveiled digital vaccine certification. Cyprus, Czech Republic, Estonia, Greece, Hungary, Iceland, Italy, Poland, Portugal, Slovakia, and Spain have all committed to a vaccine passport system and the rest including the whole of the EU would follow. The satanic UK government will certainly go this way despite mendacious denials and at the time of writing it is trying to manipulate the public into having the 'vaccine' so they could go abroad on a summer holiday. How would that work without something to prove you had the synthetic toxicity injected into you?

Documents show that the EU's European Commission was moving towards 'vaccine certificates' in 2018 and 2019 before the 'Covid' hoax began. They knew what was coming. Abracadabra – Ursula von der Leyen, the German President of the Commission, announced in March, 2021, an EU 'Digital Green Certificate' – green again – to track the public's 'Covid status'. The passport sting is worldwide and the Far East followed the same pattern with South Korea ruling that only those with 'vaccination' passports – again the *green* pass – would be able to 'return to their daily lives'.

Bill Gates has been preparing for this 'passport' with other Cult operatives for years and beyond the paper version is a Gates-funded 'digital tattoo' to identify who has been vaccinated and who hasn't. The 'tattoo' is reported to include a substance which is externally readable to confirm who has been vaccinated. This is a bio-luminous light-generating enzyme (think fireflies) called … *Luciferase*. Yes, named after the Cult 'god' Lucifer the 'light bringer' of whom more to come. Gates said he funded the readable tattoo to ensure children in the developing world were vaccinated and no one was missed out. He cares so much about poor kids as we know. This was just the cover story to develop a vaccine tagging system for everyone on the planet. Gates has been funding the ID2020 'alliance' to do just that in league with other lovely people at Microsoft, GAVI, the Rockefeller Foundation, Accenture and IDEO.org. He said in interviews in March, 2020, before any 'vaccine' publicly existed, that the world must have a globalised digital certificate to track the 'virus' and who had been vaccinated. Gates knew from the start that the mRNA vaccines were coming and when they would come and that the plan was to tag the 'vaccinated' to marginalise the intelligent and stop them doing anything including travel. Evil just doesn't suffice. Gates was exposed for offering a $10 million bribe to the Nigerian House of Representatives to invoke compulsory 'Covid' vaccination of all Nigerians. Sara Cunial, a member of the Italian Parliament, called Gates a 'vaccine criminal'. She urged the Italian President to hand him over to the International Criminal Court for crimes against

humanity and condemned his plans to 'chip the human race' through ID2020.

You know it's a long-planned agenda when war criminal and Cult gofer Tony Blair is on the case. With the scale of arrogance only someone as dark as Blair can muster he said: 'Vaccination in the end is going to be your route to liberty.' Blair is a disgusting piece of work and he confirms that again. The media has given a lot of coverage to a bloke called Charlie Mullins, founder of London's biggest independent plumbing company, Pimlico Plumbers, who has said he won't employ anyone who has not been vaccinated or have them go to any home where people are not vaccinated. He said that if he had his way no one would be allowed to walk the streets if they have not been vaccinated. Gates was cheering at the time while I was alerting the white coats. The plan is that people will qualify for 'passports' for having the first two doses and then to keep it they will have to have all the follow ups and new ones for invented 'variants' until human genetics is transformed and many are dead who can't adjust to the changes. Hollywood celebrities – the usual propaganda stunt – are promoting something called the WELL Health-Safety Rating to verify that a building or space has 'taken the necessary steps to prioritize the health and safety of their staff, visitors and other stakeholders'. They included Lady Gaga, Jennifer Lopez, Michael B. Jordan, Robert DeNiro, Venus Williams, Wolfgang Puck, Deepak Chopra and 17th Surgeon General Richard Carmona. Yawn. WELL Health-Safety has big connections with China. Parent company Delos is headed by former Goldman Sachs partner Paul Scialla. This is another example – and we will see so many others – of using the excuse of 'health' to dictate the lives and activities of the population. I guess one confirmation of the 'safety' of buildings is that only 'vaccinated' people can go in, right?

Electronic concentration camps

I wrote decades ago about the plans to restrict travel and here we are for those who refuse to bow to tyranny. This can be achieved in one go with air travel if the aviation industry makes a blanket decree.

The ‘vaccine’ and guaranteed income are designed to be part of a global version of China’s social credit system which tracks behaviour 24/7 and awards or deletes ‘credits’ based on whether your behaviour is supported by the state or not. I mean your entire lifestyle – what you do, eat, say, everything. Once your credit score falls below a certain level consequences kick in. In China tens of millions have been denied travel by air and train because of this. All the locations and activities denied to refusers by the ‘vaccine’ passports will be included in one big mass ban on doing almost anything for those that don’t bow their head to government. It’s beyond fascist and a new term is required to describe its extremes – I guess fascist technocracy will have to do. The way the Chinese system of technological – technocratic – control is sweeping the West can be seen in the Los Angeles school system and is planned to be expanded worldwide. Every child is required to have a ‘Covid’-tracking app scanned daily before they can enter the classroom. The so-called Daily Pass tracking system is produced by Gates’ Microsoft which I’m sure will shock you rigid. The pass will be scanned using a barcode (one step from an inside-the-body barcode) and the information will include health checks, ‘Covid’ tests and vaccinations. Entry codes are for one specific building only and access will only be allowed if a student or teacher has a negative test with a test not testing for the ‘virus’, has no symptoms of anything alleged to be related to ‘Covid’ (symptoms from a range of other illness), and has a temperature under 100 degrees. No barcode, no entry, is planned to be the case for everywhere and not only schools.

Kids are being psychologically prepared to accept this as ‘normal’ their whole life which is why what they can impose in schools is so important to the Cult and its gofers. Long-time American freedom campaigner John Whitehead of the Rutherford Institute was not exaggerating when he said: ‘Databit by databit, we are building our own electronic concentration camps.’ Canada under its Cult gofer prime minister Justin Trudeau has taken a major step towards the real thing with people interned against their will if they test positive with a test not testing for the ‘virus’ when they arrive at a Canadian

airport. They are jailed in internment hotels often without food or water for long periods and with many doors failing to lock there have been sexual assaults. The interned are being charged sometimes $2,000 for the privilege of being abused in this way. Trudeau is fully on board with the Cult and says the 'Covid pandemic' has provided an opportunity for a global 'reset' to permanently change Western civilisation. His number two, Deputy Prime Minister Chrystia Freeland, is a trustee of the World Economic Forum and a Rhodes Scholar. The Trudeau family have long been servants of the Cult. See *The Biggest Secret* and Cathy O'Brien's book *Trance-Formation of America* for the horrific background to Trudeau's father Pierre Trudeau another Canadian prime minister. Hide your fascism behind the façade of a heart-on-the-sleeve liberal. It's a well-honed Cult technique.

What can the 'vaccine' *really* do?

We have a 'virus' never shown to exist and 'variants' of the 'virus' that have also never been shown to exist except, like the 'original', as computer-generated fictions. Even if you believe there's a 'virus' the 'case' to 'death' rate is in the region of 0.23 to 0.15 percent and those 'deaths' are concentrated among the very old around the same average age that people die anyway. In response to this lack of threat (in truth none) psychopaths and idiots, knowingly and unknowingly answering to Gates and the Cult, are seeking to 'vaccinate' every man, woman and child on Planet Earth. Clearly the 'vaccine' is not about 'Covid' – none of this ever has been. So what is it all about *really*? Why the desperation to infuse genetically-manipulating synthetic material into everyone through mRNA fraudulent 'vaccines' with the intent of doing this over and over with the excuses of 'variants' and other 'virus' inventions? Dr Sherri Tenpenny, an osteopathic medical doctor in the United States, has made herself an expert on vaccines and their effects as a vehement campaigner against their use. Tenpenny was board certified in emergency medicine, the director of a level two trauma centre for 12 years, and moved to Cleveland in 1996 to start an integrative

medicine practice which has treated patients from all 50 states and some 17 other countries. Weaning people off pharmaceutical drugs is a speciality.

She became interested in the consequences of vaccines after attending a meeting at the National Vaccine Information Center in Washington DC in 2000 where she 'sat through four days of listening to medical doctors and scientists and lawyers and parents of vaccine injured kids' and asked: 'What's going on?' She had never been vaccinated and never got ill while her father was given a list of vaccines to be in the military and was 'sick his entire life'. The experience added to her questions and she began to examine vaccine documents from the Centers for Disease Control (CDC). After reading the first one, the 1998 version of *The General Recommendations of Vaccination*, she thought: 'This is it?' The document was poorly written and bad science and Tenpenny began 20 years of research into vaccines that continues to this day. She began her research into 'Covid vaccines' in March, 2020, and she describes them as 'deadly'. For many, as we have seen, they already have been. Tenpenny said that in the first 30 days of the 'vaccine' rollout in the United States there had been more than 40,000 adverse events reported to the vaccine adverse event database. A document had been delivered to her the day before that was 172 pages long. 'We have over 40,000 adverse events; we have over 3,100 cases of [potentially deadly] anaphylactic shock; we have over 5,000 neurological reactions.' Effects ranged from headaches to numbness, dizziness and vertigo, to losing feeling in hands or feet and paraesthesia which is when limbs 'fall asleep' and people have the sensation of insects crawling underneath their skin. All this happened in the first 30 days and remember that only about *ten percent* (or far less) of adverse reactions and vaccine-related deaths are estimated to be officially reported. Tenpenny said:

> So can you think of one single product in any industry, any industry, for as long as products have been made on the planet that within 30 days we have 40,000 people complaining of side effects that not only is still on the market but … we've got paid actors telling us how great

they are for getting their vaccine. We're offering people $500 if they will just get their vaccine and we've got nurses and doctors going; 'I got the vaccine, I got the vaccine'.

Tenpenny said they were not going to be 'happy dancing folks' when they began to suffer Bell's palsy (facial paralysis), neuropathies, cardiac arrhythmias and autoimmune reactions that kill through a blood disorder. 'They're not going to be so happy, happy then, but we're never going to see pictures of those people' she said. Tenpenny described the 'vaccine' as 'a well-designed killing tool'.

No off-switch

Bad as the initial consequences had been Tenpenny said it would be maybe 14 months before we began to see the 'full ravage' of what is going to happen to the 'Covid vaccinated' with full-out consequences taking anything between two years and 20 years to show. You can understand why when you consider that variations of the 'Covid vaccine' use mRNA (messenger RNA) to in theory activate the immune system to produce protective antibodies without using the actual 'virus'. How can they when it's a computer program and they've never isolated what they claim is the 'real thing'? Instead they use *synthetic* mRNA. They are inoculating synthetic material into the body which through a technique known as the Trojan horse is absorbed into cells to change the nature of DNA. Human DNA is changed by an infusion of messenger RNA and with each new 'vaccine' of this type it is changed even more. Say so and you are banned by Cult Internet platforms. The contempt the contemptuous Mark Zuckerberg has for the truth and human health can be seen in an internal Facebook video leaked to the Project Veritas investigative team in which he said of the 'Covid vaccines': '… I share some caution on this because we just don't know the long term side-effects of basically modifying people's DNA and RNA.' At the same time this disgusting man's Facebook was censoring and banning anyone saying exactly the same. He must go before a Nuremberg trial for crimes against humanity when he *knows* that he

is censoring legitimate concerns and denying the right of informed consent on behalf of the Cult that owns him. People have been killed and damaged by the very 'vaccination' technique he cast doubt on himself when they may not have had the 'vaccine' with access to information that he denied them. The plan is to have at least annual 'Covid vaccinations', add others to deal with invented 'variants', and change all other vaccines into the mRNA system. Pfizer executives told shareholders at a virtual Barclays Global Healthcare Conference in March, 2021, that the public may need a third dose of 'Covid vaccine', plus regular yearly boosters and the company planned to hike prices to milk the profits in a 'significant opportunity for our vaccine'. These are the professional liars, cheats and opportunists who are telling you their 'vaccine' is safe. Given this volume of mRNA planned to be infused into the human body and its ability to then replicate we will have a transformation of human genetics from biological to synthetic biological – exactly the long-time Cult plan for reasons we'll see – and many will die. Sherri Tenpenny said of this replication:

> It's like having an on-button but no off-button and that whole mechanism … they actually give it a name and they call it the Trojan horse mechanism, because it allows that [synthetic] virus and that piece of that [synthetic] virus to get inside of your cells, start to replicate and even get inserted into other parts of your DNA as a Trojan-horse.

Ask the overwhelming majority of people who have the 'vaccine' what they know about the contents and what they do and they would reply: 'The government says it will stop me getting the virus.' Governments give that false impression on purpose to increase take-up. You can read Sherri Tenpenny's detailed analysis of the health consequences in her blog at Vaxxter.com, but in summary these are some of them. She highlights the statement by Bill Gates about how human beings can become their own 'vaccine manufacturing machine'. The man is insane. ['Vaccine'-generated] 'antibodies' carry synthetic messenger RNA into the cells and the damage starts, Tenpenny contends, and she says that lungs can be adversely affected through varying degrees of pus and bleeding which

obviously affects breathing and would be dubbed 'Covid-19'. Even more sinister was the impact of 'antibodies' on macrophages, a white blood cell of the immune system. They consist of Type 1 and Type 2 which have very different functions. She said Type 1 are 'hyper-vigilant' white blood cells which 'gobble up' bacteria etc. However, in doing so, this could cause inflammation and in extreme circumstances be fatal. She says these affects are mitigated by Type 2 macrophages which kick in to calm down the system and stop it going rogue. They clear up dead tissue debris and reduce inflammation that the Type 1 'fire crews' have caused. Type 1 kills the infection and Type 2 heals the damage, she says. This is her punchline with regard to 'Covid vaccinations': She says that mRNA 'antibodies' block Type 2 macrophages by attaching to them and deactivating them. This meant that when the Type 1 response was triggered by infection there was nothing to stop that getting out of hand by calming everything down. There's an on-switch, but no off-switch, she says. What follows can be 'over and out, see you when I see you'.

Genetic suicide

Tenpenny also highlights the potential for autoimmune disease – the body attacking itself – which has been associated with vaccines since they first appeared. Infusing a synthetic foreign substance into cells could cause the immune system to react in a panic believing that the body is being overwhelmed by an invader (it is) and the consequences can again be fatal. There is an autoimmune response known as a 'cytokine storm' which I have likened to a homeowner panicked by an intruder and picking up a gun to shoot randomly in all directions before turning the fire on himself. The immune system unleashes a storm of inflammatory response called cytokines to a threat and the body commits hara-kiri. The lesson is that you mess with the body's immune response at your peril and these 'vaccines' seriously – fundamentally – mess with immune response. Tenpenny refers to a consequence called anaphylactic shock which is a severe and highly dangerous allergic reaction when the immune system

floods the body with chemicals. She gives the example of having a bee sting which primes the immune system and makes it sensitive to those chemicals. When people are stung again maybe years later the immune response can be so powerful that it leads to anaphylactic shock. Tenpenny relates this 'shock' with regard to the 'Covid vaccine' to something called polyethylene glycol or PEG. Enormous numbers of people have become sensitive to this over decades of use in a whole range of products and processes including food, drink, skin creams and 'medicine'. Studies have claimed that some 72 percent of people have antibodies triggered by PEG compared with two percent in the 1960s and allergic hypersensitive reactions to this become a gathering cause for concern. Tenpenny points out that the 'mRNA vaccine' is coated in a 'bubble' of polyethylene glycol which has the potential to cause anaphylactic shock through immune sensitivity. Many reports have appeared of people reacting this way after having the 'Covid vaccine'. What do we think is going to happen as humanity has more and more of these 'vaccines'? Tenpenny said: 'All these pictures we have seen with people with these rashes … these weepy rashes, big reactions on their arms and things like that – it's an acute allergic reaction most likely to the polyethylene glycol that you've been previously primed and sensitised to.'

Those who have not studied the conspiracy and its perpetrators at length might think that making the population sensitive to PEG and then putting it in these 'vaccines' is just a coincidence. It is not. It is instead testament to how carefully and coldly-planned current events have been and the scale of the conspiracy we are dealing with. Tenpenny further explains that the 'vaccine' mRNA procedure can breach the blood-brain barrier which protects the brain from toxins and other crap that will cause malfunction. In this case they could make two proteins corrupt brain function to cause Amyotrophic lateral sclerosis (ALS) , a progressive nervous system disease leading to loss of muscle control, and frontal lobe degeneration – Alzheimer's and dementia. Immunologist J. Bart Classon published a paper connecting mRNA 'vaccines' to prion

disease which can lead to Alzheimer's and other forms of neurogenerative disease while others have pointed out the potential to affect the placenta in ways that make women infertile. This will become highly significant in the next chapter when I will discuss other aspects of this non-vaccine that relate to its nanotechnology and transmission from the injected to the uninjected.

Qualified in idiocy

Tenpenny describes how research has confirmed that these 'vaccine'-generated antibodies can interact with a range of other tissues in the body and attack many other organs including the lungs. 'This means that if you have a hundred people standing in front of you that all got this shot they could have a hundred different symptoms.' Anyone really think that Cult gofers like the Queen, Tony Blair, Christopher Whitty, Anthony Fauci, and all the other psychopaths have really had this 'vaccine' in the pictures we've seen? Not a bloody chance. Why don't doctors all tell us about all these dangers and consequences of the 'Covid vaccine'? Why instead do they encourage and pressure patients to have the shot? Don't let's think for a moment that doctors and medical staff can't be stupid, lazy, and psychopathic and that's without the financial incentives to give the jab. Tenpenny again:

> Some people are going to die from the vaccine directly but a large number of people are going to start to get horribly sick and get all kinds of autoimmune diseases 42 days to maybe a year out. What are they going to do, these stupid doctors who say; 'Good for you for getting that vaccine.' What are they going to say; 'Oh, it must be a mutant, we need to give an extra dose of that vaccine.'
>
> Because now the vaccine, instead of one dose or two doses we need three or four because the stupid physicians aren't taking the time to learn anything about it. If I can learn this sitting in my living room reading a 19 page paper and several others so can they. There's nothing special about me, I just take the time to do it.

Remember how Sara Kayat, the NHS and TV doctor, said that the 'Covid vaccine' would '100 percent prevent hospitalisation and death'. Doctors can be idiots like every other profession and they

should not be worshipped as infallible. They are not and far from it. Behind many medical and scientific 'experts' lies an uninformed prat trying to hide themselves from you although in the 'Covid' era many have failed to do so as with UK narrative-repeating 'TV doctor' Hilary Jones. Pushing back against the minority of proper doctors and scientists speaking out against the 'vaccine' has been the entire edifice of the Cult global state in the form of governments, medical systems, corporations, mainstream media, Silicon Valley, and an army of compliant doctors, medical staff and scientists willing to say anything for money and to enhance their careers by promoting the party line. If you do that you are an 'expert' and if you won't you are an 'anti-vaxxer' and 'Covidiot'. The pressure to be 'vaccinated' is incessant. We have even had reports claiming that the 'vaccine' can help cure cancer and Alzheimer's and make the lame walk. I am waiting for the announcement that it can bring you coffee in the morning and cook your tea. Just as the symptoms of 'Covid' seem to increase by the week so have the miracles of the 'vaccine'. American supermarket giant Kroger Co. offered nearly 500,000 employees in 35 states a $100 bonus for having the 'vaccine' while donut chain Krispy Kreme promised 'vaccinated' customers a free glazed donut every day for the rest of 2021. Have your DNA changed and you will get a doughnut although we might not have to give you them for long. Such offers and incentives confirm the desperation.

Perhaps the worse vaccine-stunt of them all was UK 'Health' Secretary Matt-the-prat Hancock on live TV after watching a clip of someone being 'vaccinated' when the roll-out began. Hancock faked tears so badly it was embarrassing. Brain-of-Britain Piers Morgan, the lockdown-supporting, 'vaccine' supporting, 'vaccine' passport-supporting, TV host played along with Hancock – 'You're quite emotional about that' he said in response to acting so atrocious it would have been called out at a school nativity which will presumably today include Mary and Jesus in masks, wise men keeping their camels six feet apart, and shepherds under tent arrest. System-serving Morgan tweeted this: 'Love the idea of covid vaccine passports for everywhere: flights, restaurants, clubs, football, gyms,

shops etc. It's time covid-denying, anti-vaxxer loonies had their bullsh*t bluff called & bar themselves from going anywhere that responsible citizens go.' If only I could aspire to his genius. To think that Morgan, who specialises in shouting over anyone he disagrees with, was lauded as a free speech hero when he lost his job after storming off the set of his live show like a child throwing his dolly out of the pram. If he is a free speech hero we are in real trouble. I have no idea what 'bullsh*t' means, by the way, the * throws me completely.

The Cult is desperate to infuse its synthetic DNA-changing concoction into everyone and has been using every lie, trick and intimidation to do so. The question of '*Why*?' we shall now address.

CHAPTER TEN

Human 2.0

I believe that at the end of the century the use of words and general educated opinion will have altered so much that one will be able to speak of machines thinking without expecting to be contradicted –
Alan Turing (1912-1954), the 'Father of artificial intelligence'

I have been exposing for decades the plan to transform the human body from a biological to a synthetic-biological state. The new human that I will call Human 2.0 is planned to be connected to artificial intelligence and a global AI 'Smart Grid' that would operate as one global system in which AI would control everything from your fridge to your heating system to your car to your mind. Humans would no longer be 'human', but post-human and sub-human, with their thinking and emotional processes replaced by AI.

What I said sounded crazy and beyond science fiction and I could understand that. To any balanced, rational, mind it *is* crazy. Today, however, that world is becoming reality and it puts the 'Covid vaccine' into its true context. Ray Kurzweil is the ultra-Zionist 'computer scientist, inventor and futurist' and co-founder of the Singularity University. Singularity refers to the merging of humans with machines or 'transhumanism'. Kurzweil has said humanity would be connected to the cyber 'cloud' in the period of the ever-recurring year of 2030:

Our thinking … will be a hybrid of biological and non-biological thinking … humans will be able to extend their limitations and 'think in the cloud' … We're going to put gateways to the

cloud in our brains ... We're going to gradually merge and enhance ourselves ... In my view, that's the nature of being human – we transcend our limitations. As the technology becomes vastly superior to what we are then the small proportion that is still human gets smaller and smaller and smaller until it's just utterly negligible.

They are trying to sell this end-of-humanity-as-we-know-it as the next stage of 'evolution' when we become super-human and 'like the gods'. They are lying to you. Shocked, eh? The population, and again especially the young, have been manipulated into addiction to technologies designed to enslave them for life. First they induced an addiction to smartphones (holdables); next they moved to technology on the body (wearables); and then began the invasion of the body (implantables). I warned way back about the plan for microchipped people and we are now entering that era. We should not be diverted into thinking that this refers only to chips we can see. Most important are the nanochips known as smart dust, neural dust and nanobots which are far too small to be seen by the human eye. Nanotechnology is everywhere, increasingly in food products, and released into the atmosphere by the geoengineering of the skies funded by Bill Gates to 'shut out the Sun' and 'save the planet from global warming'. Gates has been funding a project to spray millions of tonnes of chalk (calcium carbonate) into the stratosphere over Sweden to 'dim the Sun' and cool the Earth. Scientists warned the move could be disastrous for weather systems in ways no one can predict and opposition led to the Swedish space agency announcing that the 'experiment' would not be happening as planned in the summer of 2021; but it shows where the Cult is going with dimming the impact of the Sun and there's an associated plan to change the planet's atmosphere. Who gives psychopath Gates the right to dictate to the entire human race and dismantle planetary systems? The world will not be safe while this man is at large.

The global warming hoax has made the Sun, like the gas of life, something to fear when both are essential to good health and human survival (more inversion). The body transforms sunlight into vital vitamin D through a process involving … *cholesterol*. This is the cholesterol we are also told to fear. We are urged to take Big Pharma

statin drugs to reduce cholesterol and it's all systematic. Reducing cholesterol means reducing vitamin D uptake with all the multiple health problems that will cause. At least if you take statins long term it saves the government from having to pay you a pension. The delivery system to block sunlight is widely referred to as chemtrails although these have a much deeper agenda, too. They appear at first to be contrails or condensation trails streaming from aircraft into cold air at high altitudes. Contrails disperse very quickly while chemtrails do not and spread out across the sky before eventually their content falls to earth. Many times I have watched aircraft cross-cross a clear blue sky releasing chemtrails until it looks like a cloudy day. Chemtrails contain many things harmful to humans and the natural world including toxic heavy metals, aluminium (see Alzheimer's) and nanotechnology. Ray Kurzweil reveals the reason without actually saying so: 'Nanobots will infuse all the matter around us with information. Rocks, trees, everything will become these intelligent creatures.' How do you deliver that? *From the sky*. Self-replicating nanobots would connect everything to the Smart Grid. The phenomenon of Morgellons disease began in the chemtrail era and the correlation has led to it being dubbed the 'chemtrail disease'. Self-replicating fibres appear in the body that can be pulled out through the skin. Morgellons fibres continue to grow outside the body and have a form of artificial intelligence. I cover this at greater length in *Phantom Self*.

'Vaccine' operating system

'Covid vaccines' with their self-replicating synthetic material are also designed to make the connection between humanity and Kurzweil's 'cloud'. American doctor and dedicated campaigner for truth, Carrie Madej, an Internal Medicine Specialist in Georgia with more than 20 years medical experience, has highlighted the nanotechnology aspect of the fake 'vaccines'. She explains how one of the components in at least the Moderna and Pfizer synthetic potions are 'lipid nanoparticles' which are 'like little tiny computer bits' – a 'sci-fi substance' known as nanobots and hydrogel which can be 'triggered

at any moment to deliver its payload' and act as 'biosensors'. The synthetic substance had 'the ability to accumulate data from your body like your breathing, your respiration, thoughts and emotions, all kind of things' and each syringe could carry a *million* nanobots:

This substance because it's like little bits of computers in your body, crazy, but it's true, it can do that, [and] obviously has the ability to act through Wi-Fi. It can receive and transmit energy, messages, frequencies or impulses. That issue has never been addressed by these companies. What does that do to the human?

Just imagine getting this substance in you and it can react to things all around you, the 5G, your smart device, your phones, what is happening with that? What if something is triggering it, too, like an impulse, a frequency? We have something completely foreign in the human body.

Madej said her research revealed that electromagnetic (EMF) frequencies emitted by phones and other devices had increased dramatically in the same period of the 'vaccine' rollout and she was seeing more people with radiation problems as 5G and other electromagnetic technology was expanded and introduced to schools and hospitals. She said she was 'floored with the EMF coming off' the devices she checked. All this makes total sense and syncs with my own work of decades when you think that Moderna refers in documents to its mRNA 'vaccine' as an 'operating system':

Recognizing the broad potential of mRNA science, we set out to create an mRNA technology platform that functions very much like an operating system on a computer. It is designed so that it can plug and play interchangeably with different programs. In our case, the 'program' or 'app' is our mRNA drug – the unique mRNA sequence that codes for a protein …

… Our MRNA Medicines – 'The 'Software Of Life': When we have a concept for a new mRNA medicine and begin research, fundamental components are already in place. Generally, the only thing that changes from one potential mRNA medicine to another is the coding region – the actual genetic code that instructs ribosomes to make protein. Utilizing these instruction sets gives our investigational mRNA medicines a software-like quality. We also have the ability to combine different mRNA sequences encoding for different proteins in a single mRNA investigational medicine.

Who needs a real 'virus' when you can create a computer version to justify infusing your operating system into the entire human race on the road to making living, breathing people into cyborgs? What is missed with the 'vaccines' is the *digital* connection between synthetic material and the body that I highlighted earlier with the study that hacked a computer with human DNA. On one level the body is digital, based on mathematical codes, and I'll have more about that in the next chapter. Those who ridiculously claim that mRNA 'vaccines' are not designed to change human genetics should explain the words of Dr Tal Zaks, chief medical officer at Moderna, in a 2017 TED talk. He said that over the last 30 years 'we've been living this phenomenal digital scientific revolution, and I'm here today to tell you, that we are actually *hacking the software of life*, and that it's changing the way we think about prevention and treatment of disease':

In every cell there's this thing called messenger RNA, or mRNA for short, that transmits the critical information from the DNA in our genes to the protein, which is really the stuff we're all made out of. This is the critical information that determines what the cell will do. So we think about it as an operating system. So if you could change that, if you could introduce a line of code, or change a line of code, it turns out, that has profound implications for everything, from the flu to cancer.

Zaks should more accurately have said that this has profound implications for the human genetic code and the nature of DNA. Communications within the body go both ways and not only one. But, hey, no, the 'Covid vaccine' will not affect your genetics. Cult fact-checkers say so even though the man who helped to develop the mRNA technique says that it does. Zaks said in 2017:

If you think about what it is we're trying to do. We've taken information and our understanding of that information and how that information is transmitted in a cell, and we've taken our understanding of medicine and how to make drugs, and we're fusing the two. We think of it as information therapy.

I have been writing for decades that the body is an information field communicating with itself and the wider world. This is why

radiation which is information can change the information field of body and mind through phenomena like 5G and change their nature and function. 'Information therapy' means to change the body's information field and change the way it operates. DNA is a receiver-transmitter of information and can be mutated by information like mRNA synthetic messaging. Technology to do this has been ready and waiting in the underground bases and other secret projects to be rolled out when the 'Covid' hoax was played. 'Trials' of such short and irrelevant duration were only for public consumption. When they say the 'vaccine' is 'experimental' that is not true. It may appear to be 'experimental' to those who don't know what's going on, but the trials have already been done to ensure the Cult gets the result it desires. Zaks said that it took decades to sequence the human genome, completed in 2003, but now they could do it in a week. By 'they' he means scientists operating in the public domain. In the secret projects they were sequencing the genome in a week long before even 2003.

Deluge of mRNA

Highly significantly the Moderna document says the guiding premise is that if using mRNA as a medicine works for one disease then it should work for many diseases. They were leveraging the flexibility afforded by their platform and the fundamental role mRNA plays in protein synthesis to pursue mRNA medicines for a broad spectrum of diseases. Moderna is confirming what I was saying through 2020 that multiple 'vaccines' were planned for 'Covid' (and later invented 'variants') and that previous vaccines would be converted to the mRNA system to infuse the body with massive amounts of genetically-manipulating synthetic material to secure a transformation to a synthetic-biological state. The 'vaccines' are designed to kill stunning numbers as part of the long-exposed Cult depopulation agenda and transform the rest. Given this is the goal you can appreciate why there is such hysterical demand for every human to be 'vaccinated' for an alleged 'disease' that has an estimated 'infection' to 'death' ratio of 0.23-0.15 percent. As I write

children are being given the 'vaccine' in trials (their parents are a disgrace) and ever-younger people are being offered the vaccine for a 'virus' that even if you believe it exists has virtually zero chance of harming them. Horrific effects of the 'trials' on a 12-year-old girl were revealed by a family member to be serious brain and gastric problems that included a bowel obstruction and the inability to swallow liquids or solids. She was unable to eat or drink without throwing up, had extreme pain in her back, neck and abdomen, and was paralysed from the waist down which stopped her urinating unaided. When the girl was first taken to hospital doctors said it was all in her mind. She was signed up for the 'trial' by her parents for whom no words suffice. None of this 'Covid vaccine' insanity makes any sense unless you see what the 'vaccine' really is – a body-changer. Synthetic biology or 'SynBio' is a fast-emerging and expanding scientific discipline which includes everything from genetic and molecular engineering to electrical and computer engineering. Synthetic biology is defined in these ways:

- A multidisciplinary area of research that seeks to create new biological parts, devices, and systems, or to redesign systems that are already found in nature.

- The use of a mixture of physical engineering and genetic engineering to create new (and therefore synthetic) life forms.

- An emerging field of research that aims to combine the knowledge and methods of biology, engineering and related disciplines in the design of chemically-synthesized DNA to create organisms with novel or enhanced characteristics and traits (synthetic organisms including humans).

We now have synthetic blood, skin, organs and limbs being developed along with synthetic body parts produced by 3D printers. These are all elements of the synthetic human programme and this comment by Kurzweil's co-founder of the Singularity University,

Peter Diamandis, can be seen in a whole new light with the 'Covid' hoax and the sanctions against those that refuse the 'vaccine':

Anybody who is going to be resisting the progress forward [to transhumanism] is going to be resisting evolution and, fundamentally, they will die out. It's not a matter of whether it's good or bad. It's going to happen.

'Resisting evolution'? What absolute bollocks. The arrogance of these people is without limit. His 'it's going to happen' mantra is another way of saying 'resistance is futile' to break the spirit of those pushing back and we must not fall for it. Getting this genetically-transforming 'vaccine' into everyone is crucial to the Cult plan for total control and the desperation to achieve that is clear for anyone to see. Vaccine passports are a major factor in this and they, too, are a form of resistance is futile. It's NOT. The paper funded by the Rockefeller Foundation for the 2013 'health conference' in China said:

We will interact more with artificial intelligence. The use of robotics, bio-engineering to augment human functioning is already well underway and will advance. Re-engineering of humans into potentially separate and unequal forms through genetic engineering or mixed human-robots raises debates on ethics and equality.

A new demography is projected to emerge after 2030 [that year again] of technologies (robotics, genetic engineering, nanotechnology) producing robots, engineered organisms, 'nanobots' and artificial intelligence (AI) that can self-replicate. Debates will grow on the implications of an impending reality of human designed life.

What is happening today is so long planned. The world army enforcing the will of the world government is intended to be a robot army, not a human one. Today's military and its technologically 'enhanced' troops, pilotless planes and driverless vehicles are just stepping stones to that end. Human soldiers are used as Cult fodder and its time they woke up to that and worked for the freedom of the population instead of their own destruction and their family's destruction – the same with the police. Join us and let's sort this out. The phenomenon of enforce my own destruction is widespread in the 'Covid' era with Woker 'luvvies' in the acting and entertainment

industries supporting 'Covid' rules which have destroyed their profession and the same with those among the public who put signs on the doors of their businesses 'closed due to Covid – stay safe' when many will never reopen. It's a form of masochism and most certainly insanity.

Transgender = transhumanism

When something explodes out of nowhere and is suddenly everywhere it is always the Cult agenda and so it is with the tidal wave of claims and demands that have infiltrated every aspect of society under the heading of 'transgenderism'. The term 'trans' is so 'in' and this is the dictionary definition:

A prefix meaning 'across', 'through', occurring … in loanwords from Latin, used in particular for denoting movement or conveyance from place to place (transfer; transmit; transplant) or complete change (transform; transmute), or to form adjectives meaning 'crossing', 'on the other side of', or 'going beyond' the place named (transmontane; transnational; trans-Siberian).

Transgender means to go beyond gender and transhuman means to go beyond human. Both are aspects of the Cult plan to transform the human body to a synthetic state with *no gender*. Human 2.0 is not designed to procreate and would be produced technologically with no need for parents. The new human would mean the end of parents and so men, and increasingly women, are being targeted for the deletion of their rights and status. Parental rights are disappearing at an ever-quickening speed for the same reason. The new human would have no need for men or women when there is no procreation and no gender. Perhaps the transgender movement that appears to be in a permanent state of frenzy might now contemplate on how it is being used. This was never about transgender rights which are only the interim excuse for confusing gender, particularly in the young, on the road to *fusing* gender. Transgender activism is not an end; it is a *means* to an end. We see again the technique of creative destruction in which you destroy the status quo to 'build back better' in the form that you want. The gender status quo had to be

destroyed by persuading the Cult-created Woke mentality to believe that you can have 100 genders or more. A programme for 9 to 12 year olds produced by the Cult-owned BBC promoted the 100 genders narrative. The very idea may be the most monumental nonsense, but it is not what is true that counts, only what you can make people *believe* is true. Once the gender of 2 + 2 = 4 has been dismantled through indoctrination, intimidation and 2 + 2 = 5 then the new no-gender normal can take its place with Human 2.0. Aldous Huxley revealed the plan in his prophetic *Brave New World* in 1932:

> Natural reproduction has been done away with and children are created, decanted', and raised in 'hatcheries and conditioning centres'. From birth, people are genetically designed to fit into one of five castes, which are further split into 'Plus' and 'Minus' members and designed to fulfil predetermined positions within the social and economic strata of the World State.

How could Huxley know this in 1932? For the same reason George Orwell knew about the Big Brother state in 1948, Cult insiders I have quoted knew about it in 1969, and I have known about it since the early 1990s. If you are connected to the Cult or you work your balls off to uncover the plan you can predict the future. The process is simple. If there is a plan for the world and nothing intervenes to stop it then it will happen. Thus if you communicate the plan ahead of time you are perceived to have predicted the future, but you haven't. You have revealed the plan which without intervention will become the human future. The whole reason I have done what I have is to alert enough people to inspire an intervention and maybe at last that time has come with the Cult and its intentions now so obvious to anyone with a brain in working order.

The future is here

Technological wombs that Huxley described to replace parent procreation are already being developed and they are only the projects we know about in the public arena. Israeli scientists told *The Times of Israel* in March, 2021, that they have grown 250-cell embryos

into mouse foetuses with fully formed organs using artificial wombs in a development they say could pave the way for gestating humans outside the womb. Professor Jacob Hanna of the Weizmann Institute of Science said:

We took mouse embryos from the mother at day five of development, when they are just of 250 cells, and had them in the incubator from day five until day 11, by which point they had grown all their organs.

By day 11 they make their own blood and have a beating heart, a fully developed brain. Anybody would look at them and say, 'this is clearly a mouse foetus with all the characteristics of a mouse.' It's gone from being a ball of cells to being an advanced foetus.

A special liquid is used to nourish embryo cells in a laboratory dish and they float on the liquid to duplicate the first stage of embryonic development. The incubator creates all the right conditions for its development, Hanna said. The liquid gives the embryo 'all the nutrients, hormones and sugars they need' along with a custom-made electronic incubator which controls gas concentration, pressure and temperature. The cutting-edge in the underground bases and other secret locations will be light years ahead of that, however, and this was reported by the London *Guardian* in 2017:

We are approaching a biotechnological breakthrough. Ectogenesis, the invention of a complete external womb, could completely change the nature of human reproduction. In April this year, researchers at the Children's Hospital of Philadelphia announced their development of an artificial womb.

The article was headed 'Artificial wombs could soon be a reality. What will this mean for women?' What would it mean for children is an even bigger question. No mother to bond with only a machine in preparation for a life of soulless interaction and control in a world governed by machines (see the *Matrix* movies). Now observe the calculated manipulations of the 'Covid' hoax as human interaction and warmth has been curtailed by distancing, isolation and fear with people communicating via machines on a scale never seen before.

These are all dots in the same picture as are all the personal assistants, gadgets and children's toys through which kids and adults communicate with AI as if it is human. The AI 'voice' on Sat-Nav should be included. All these things are psychological preparation for the Cult endgame. Before you can make a physical connection with AI you have to make a psychological connection and that is what people are being conditioned to do with this ever gathering human-AI interaction. Movies and TV programmes depicting the transhuman, robot dystopia relate to a phenomenon known as 'pre-emptive programming' in which the world that is planned is portrayed everywhere in movies, TV and advertising. This is conditioning the conscious and subconscious mind to become familiar with the planned reality to dilute resistance when it happens for real. What would have been a shock such is the change is made less so. We have young children put on the road to transgender transition surgery with puberty blocking drugs at an age when they could never be able to make those life-changing decisions.

Rachel Levine, a professor of paediatrics and psychiatry who believes in treating children this way, became America's highest-ranked openly-transgender official when she was confirmed as US Assistant Secretary at the Department of Health and Human Services after being nominated by Joe Biden (the Cult). Activists and governments press for laws to deny parents a say in their children's transition process so the kids can be isolated and manipulated into agreeing to irreversible medical procedures. A Canadian father Robert Hoogland was denied bail by the Vancouver Supreme Court in 2021 and remained in jail for breaching a court order that he stay silent over his young teenage daughter, a minor, who was being offered life-changing hormone therapy without parental consent. At the age of 12 the girl's 'school counsellor' said she may be transgender, referred her to a doctor and told the school to treat her like a boy. This is another example of state-serving schools imposing ever more control over children's lives while parents have ever less.

Contemptible and extreme child abuse is happening all over the world as the Cult gender-fusion operation goes into warp-speed.

Why the war on men – and now women?

The question about what artificial wombs mean for women should rightly be asked. The answer can be seen in the deletion of women's rights involving sport, changing rooms, toilets and status in favour of people in male bodies claiming to identify as women. I can identify as a mountain climber, but it doesn't mean I can climb a mountain any more than a biological man can be a biological woman. To believe so is a triumph of belief over factual reality which is the very perceptual basis of everything Woke. Women's sport is being destroyed by allowing those with male bodies who say they identify as female to 'compete' with girls and women. Male body 'women' dominate 'women's' competition with their greater muscle mass, bone density, strength and speed. With that disadvantage sport for women loses all meaning. To put this in perspective nearly 300 American high school boys can run faster than the quickest woman sprinter in the world. Women are seeing their previously protected spaces invaded by male bodies simply because they claim to identify as women. That's all they need to do to access all women's spaces and activities under the Biden 'Equality Act' that destroys equality for women with the usual Orwellian Woke inversion. Male sex offenders have already committed rapes in women's prisons after claiming to identify as women to get them transferred. Does this not matter to the Woke 'equality' hypocrites? Not in the least. What matters to Cult manipulators and funders behind transgender activists is to advance gender fusion on the way to the no-gender 'human'. When you are seeking to impose transparent nonsense like this, or the 'Covid' hoax, the only way the nonsense can prevail is through censorship and intimidation of dissenters, deletion of factual information, and programming of the unquestioning, bewildered and naive. You don't have to scan the world for long to see that all these things are happening.

Many women's rights organisations have realised that rights and status which took such a long time to secure are being eroded and that it is systematic. Kara Dansky of the global Women's Human Rights Campaign said that Biden's transgender executive order immediately he took office, subsequent orders, and Equality Act legislation that followed 'seek to erase women and girls in the law as a category'. *Exactly*. I said during the long ago-started war on men (in which many women play a crucial part) that this was going to turn into a war on them. The Cult is phasing out *both* male and female genders. To get away with that they are brought into conflict so they are busy fighting each other while the Cult completes the job with no unity of response. Unity, people, *unity*. We need unity everywhere. Transgender is the only show in town as the big step towards the no-gender human. It's not about rights for transgender people and never has been. Woke political correctness is deleting words relating to genders to the same end. Wokers believe this is to be 'inclusive' when the opposite is true. They are deleting words describing gender because gender *itself* is being deleted by Human 2.0. Terms like 'man', 'woman', 'mother' and 'father' are being deleted in the universities and other institutions to be replaced by the *no*-gender, not trans-gender, 'individuals' and 'guardians'. Women's rights campaigner Maria Keffler of Partners for Ethical Care said: 'Children are being taught from kindergarten upward that some boys have a vagina, some girls have a penis, and that kids can be any gender they want to be.' Do we really believe that suddenly countries all over the world at the same time had the idea of having drag queens go into schools or read transgender stories to very young children in the local library? It's coldly-calculated confusion of gender on the way to the fusion of gender. Suzanne Vierling, a psychologist from Southern California, made another important point:

Yesterday's slave woman who endured gynecological medical experiments is today's girl-child being butchered in a booming gender-transitioning sector. Ovaries removed, pushing her into menopause and osteoporosis, uncharted territory, and parents' rights and authority decimated.

The erosion of parental rights is a common theme in line with the Cult plans to erase the very concept of parents and 'ovaries removed, pushing her into menopause' means what? Those born female lose the ability to have children – another way to discontinue humanity as we know it.

Eliminating Human 1.0 (before our very eyes)

To pave the way for Human 2.0 you must phase out Human 1.0. This is happening through plummeting sperm counts and making women infertile through an onslaught of chemicals, radiation (including smartphones in pockets of men) and mRNA 'vaccines'. Common agriculture pesticides are also having a devastating impact on human fertility. I have been tracking collapsing sperm counts in the books for a long time and in 2021 came a book by fertility scientist and reproductive epidemiologist Shanna Swan, *Count Down: How Our Modern World Is Threatening Sperm Counts, Altering Male and Female Reproductive Development and Imperiling the Future of the Human Race*. She reports how the global fertility rate dropped by *half* between 1960 and 2016 with America's birth rate 16 percent below where it needs to be to sustain the population. Women are experiencing declining egg quality, more miscarriages, and more couples suffer from infertility. Other findings were an increase in erectile dysfunction, infant boys developing more genital abnormalities, male problems with conception, and plunging levels of the male hormone testosterone which would explain why so many men have lost their backbone and masculinity. This has been very evident during the 'Covid' hoax when women have been prominent among the Pushbackers and big strapping blokes have bowed their heads, covered their faces with a nappy and quietly submitted. Mind control expert Cathy O'Brien also points to how global education introduced the concept of 'we're all winners' in sport and classrooms: 'Competition was defused, and it in turn defused a sense of fighting back.' This is another version of the 'equity' doctrine in which you drive down rather than raise up. What a contrast in Cult-controlled China with its global ambitions

where the government published plans in January, 2021, to 'cultivate masculinity' in boys from kindergarten through to high school in the face of a 'masculinity crisis'. A government adviser said boys would be soon become 'delicate, timid and effeminate' unless action was taken. Don't expect any similar policy in the targeted West. A 2006 study showed that a 65-year-old man in 2002 had testosterone levels *15 percent* lower than a 65-year-old man in 1987 while a 2020 study found a similar story with young adults and adolescents. Men are getting prescriptions for testosterone replacement therapy which causes an even greater drop in sperm count with up to 99 percent seeing sperm counts drop to zero during the treatment. More sperm is defective and malfunctioning with some having two heads or not pursuing an egg.

A class of *synthetic* chemicals known as phthalates are being blamed for the decline. These are found everywhere in plastics, shampoos, cosmetics, furniture, flame retardants, personal care products, pesticides, canned foods and even receipts. Why till receipts? Everyone touches them. Let no one delude themselves that all this is not systematic to advance the long-time agenda for human body transformation. Phthalates mimic hormones and disrupt the hormone balance causing testosterone to fall and genital birth defects in male infants. Animals and fish have been affected in the same way due to phthalates and other toxins in rivers. When fish turn gay or change sex through chemicals in rivers and streams it is a pointer to why there has been such an increase in gay people and the sexually confused. It doesn't matter to me what sexuality people choose to be, but if it's being affected by chemical pollution and consumption then we need to know. Does anyone really think that this is not connected to the transgender agenda, the war on men and the condemnation of male 'toxic masculinity'? You watch this being followed by 'toxic femininity'. It's already happening. When breastfeeding becomes 'chest-feeding', pregnant women become pregnant people along with all the other Woke claptrap you know that the world is going insane and there's a Cult scam in progress. Transgender activists are promoting the Cult agenda while Cult

billionaires support and fund the insanity as they laugh themselves to sleep at the sheer stupidity for which humans must be infamous in galaxies far, far away.

'Covid vaccines' and female infertility

We can now see why the 'vaccine' has been connected to potential infertility in women. Dr Michael Yeadon, former Vice President and Chief Scientific Advisor at Pfizer, and Dr Wolfgang Wodarg in Germany, filed a petition with the European Medicines Agency in December, 2020, urging them to stop trials for the Pfizer/BioNTech shot and all other mRNA trials until further studies had been done. They were particularly concerned about possible effects on fertility with 'vaccine'-produced antibodies attacking the protein Syncytin-1 which is responsible for developing the placenta. The result would be infertility 'of indefinite duration' in women who have the 'vaccine' with the placenta failing to form. Section 10.4.2 of the Pfizer/BioNTech trial protocol says that pregnant women or those who might become so should not have mRNA shots. Section 10.4 warns men taking mRNA shots to 'be abstinent from heterosexual intercourse' and not to donate sperm. The UK government said that it *did not know* if the mRNA procedure had an effect on fertility. *Did not know?* These people have to go to jail. UK government advice did not recommend at the start that pregnant women had the shot and said they should avoid pregnancy for at least two months after 'vaccination'. The 'advice' was later updated to pregnant women should only have the 'vaccine' if the benefits outweighed the risks to mother and foetus. What the hell is that supposed to mean? Then 'spontaneous abortions' began to appear and rapidly increase on the adverse reaction reporting schemes which include only a fraction of adverse reactions. Thousands and ever-growing numbers of 'vaccinated' women are describing changes to their menstrual cycle with heavier blood flow, irregular periods and menstruating again after going through the menopause – all links to reproduction effects. Women are passing blood clots and the lining of their uterus while men report erectile dysfunction and blood effects. Most

significantly of all *un*vaccinated women began to report similar menstrual changes after interaction with *'vaccinated'* people and men and children were also affected with bleeding noses, blood clots and other conditions. 'Shedding' is when vaccinated people can emit the content of a vaccine to affect the unvaccinated, but this is different. 'Vaccinated' people were not shedding a 'live virus' allegedly in 'vaccines' as before because the fake 'Covid vaccines' involve synthetic material and other toxicity. Doctors exposing what is happening prefer the term 'transmission' to shedding. Somehow those that have had the shots are transmitting effects to those that haven't. Dr Carrie Madej said the nano-content of the 'vaccines' can 'act like an antenna' to others around them which fits perfectly with my own conclusions. This 'vaccine' transmission phenomenon was becoming known as the book went into production and I deal with this further in the Postscript.

Vaccine effects on sterility are well known. The World Health Organization was accused in 2014 of sterilising millions of women in Kenya with the evidence confirmed by the content of the vaccines involved. The same WHO behind the 'Covid' hoax admitted its involvement for more than ten years with the vaccine programme. Other countries made similar claims. Charges were lodged by Tanzania, Nicaragua, Mexico, and the Philippines. The Gardasil vaccine claimed to protect against a genital 'virus' known as HPV has also been linked to infertility. Big Pharma and the WHO (same thing) are criminal and satanic entities. Then there's the Bill Gates Foundation which is connected through funding and shared interests with 20 pharmaceutical giants and laboratories. He stands accused of directing the policy of United Nations Children's Fund (UNICEF), vaccine alliance GAVI, and other groupings, to advance the vaccine agenda and silence opposition at great cost to women and children. At the same time Gates wants to reduce the global population. Coincidence?

Great Reset = Smart Grid = new human

The Cult agenda I have been exposing for 30 years is now being openly promoted by Cult assets like Gates and Klaus Schwab of the World Economic Forum under code-terms like the 'Great Reset', 'Build Back Better' and 'a rare but narrow window of opportunity to reflect, reimagine, and reset our world'. What provided this 'rare but narrow window of opportunity'? The 'Covid' hoax did. Who created that? *They* did. My books from not that long ago warned about the planned 'Internet of Things' (IoT) and its implications for human freedom. This was the plan to connect all technology to the Internet and artificial intelligence and today we are way down that road with an estimated 36 billion devices connected to the World Wide Web and that figure is projected to be 76 billion by 2025. I further warned that the Cult planned to go beyond that to the Internet of *Everything* when the human brain was connected via AI to the Internet and Kurzweil's 'cloud'. Now we have Cult operatives like Schwab calling for precisely that under the term 'Internet of Bodies', a fusion of the physical, digital and biological into one centrally-controlled Smart Grid system which the Cult refers to as the 'Fourth Industrial Revolution'. They talk about the 'biological', but they really mean the synthetic-biological which is required to fully integrate the human body and brain into the Smart Grid and artificial intelligence planned to replace the human mind. We have everything being synthetically manipulated including the natural world through GMO and smart dust, the food we eat and the human body itself with synthetic 'vaccines'. I said in *The Answer* that we would see the Cult push for synthetic meat to replace animals and in February, 2021, the so predictable psychopath Bill Gates called for the introduction of synthetic meat to save us all from 'climate change'. The climate hoax just keeps on giving like the 'Covid' hoax. The war on meat by vegan activists is a carbon (oops, sorry) copy of the manipulation of transgender activists. They have no idea (except their inner core) that they are being used to promote and impose the agenda of the Cult or that they are only the *vehicle* and not the *reason*. This is not to say those who choose not to eat meat shouldn't be respected and supported in that right, but there are ulterior motives

for those in power. A *Forbes* article in December, 2019, highlighted the plan so beloved of Schwab and the Cult under the heading: 'What Is The Internet of Bodies? And How Is It Changing Our World?' The article said the human body is the latest data platform (remember 'our vaccine is an operating system'). *Forbes* described the plan very accurately and the words could have come straight out of my books from long before:

The Internet of Bodies (IoB) is an extension of the IoT and basically connects the human body to a network through devices that are ingested, implanted, or connected to the body in some way. Once connected, data can be exchanged, and the body and device can be remotely monitored and controlled.

They were really describing a human hive mind with human perception centrally-dictated via an AI connection as well as allowing people to be 'remotely monitored and controlled'. Everything from a fridge to a human mind could be directed from a central point by these insane psychopaths and 'Covid vaccines' are crucial to this. Forbes explained the process I mentioned earlier of holdable and wearable technology followed by implantable. The article said there were three generations of the Internet of Bodies that include:

- Body external: These are wearable devices such as Apple Watches or Fitbits that can monitor our health.

- Body internal: These include pacemakers, cochlear implants, and digital pills that go inside our bodies to monitor or control various aspects of health.

- Body embedded: The third generation of the Internet of Bodies is embedded technology where technology and the human body are melded together and have a real-time connection to a remote machine.

Forbes noted the development of the Brain Computer Interface (BCI) which merges the brain with an external device for monitoring and controlling in real-time. 'The ultimate goal is to help restore function to individuals with disabilities by using brain signals rather than conventional neuromuscular pathways.' Oh, do fuck off. The goal of brain interface technology is controlling human thought and emotion from the central point in a hive mind serving its masters wishes. Many people are now agreeing to be chipped to open doors without a key. You can recognise them because they'll be wearing a mask, social distancing and lining up for the 'vaccine'. The Cult plans a Great Reset money system after they have completed the demolition of the global economy in which 'money' will be exchanged through communication with body operating systems. Rand Corporation, a Cult-owned think tank, said of the Internet of Bodies or IoB:

> Internet of Bodies technologies fall under the broader IoT umbrella. But as the name suggests, IoB devices introduce an even more intimate interplay between humans and gadgets. IoB devices monitor the human body, collect health metrics and other personal information, and transmit those data over the Internet. Many devices, such as fitness trackers, are already in use … IoB devices … and those in development can track, record, and store users' whereabouts, bodily functions, and what they see, hear, and even think.

Schwab's World Economic Forum, a long-winded way of saying 'fascism' or 'the Cult', has gone full-on with the Internet of Bodies in the 'Covid' era. 'We're entering the era of the Internet of Bodies', it declared, 'collecting our physical data via a range of devices that can be implanted, swallowed or worn'. The result would be a huge amount of health-related data that could improve human wellbeing around the world, and prove crucial in fighting the 'Covid-19 pandemic'. Does anyone think these clowns care about 'human wellbeing' after the death and devastation their pandemic hoax has purposely caused? Schwab and co say we should move forward with the Internet of Bodies because 'Keeping track of symptoms could help us stop the spread of infection, and quickly detect new cases'. How wonderful, but keeping track' is all they are really bothered

about. Researchers were investigating if data gathered from smartwatches and similar devices could be used as viral infection alerts by tracking the user's heart rate and breathing. Schwab said in his 2018 book *Shaping the Future of the Fourth Industrial Revolution*:

> The lines between technologies and beings are becoming blurred and not just by the ability to create lifelike robots or synthetics. Instead it is about the ability of new technologies to literally become part of us. Technologies already influence how we understand ourselves, how we think about each other, and how we determine our realities. As the technologies … give us deeper access to parts of ourselves, we may begin to integrate digital technologies into our bodies.

You can see what the game is. Twenty-four hour control and people – if you could still call them that – would never know when something would go ping and take them out of circulation. It's the most obvious rush to a global fascist dictatorship and the complete submission of humanity and yet still so many are locked away in their Cult-induced perceptual coma and can't see it.

Smart Grid control centres

The human body is being transformed by the 'vaccines' and in other ways into a synthetic cyborg that can be attached to the global Smart Grid which would be controlled from a central point and other sub-locations of Grid manipulation. Where are these planned to be? Well, China for a start which is one of the Cult's biggest centres of operation. The technological control system and technocratic rule was incubated here to be unleashed across the world after the 'Covid' hoax came out of China in 2020. Another Smart Grid location that will surprise people new to this is Israel. I have exposed in *The Trigger* how Sabbatian technocrats, intelligence and military operatives were behind the horrors of 9/11 and not '19 Arab hijackers' who somehow manifested the ability to pilot big passenger airliners when instructors at puddle-jumping flying schools described some of them as a joke. The 9/11 attacks were made possible through control of civilian and military air computer systems and those of the White House, Pentagon and connected agencies. See *The Trigger* – it

will blow your mind. The controlling and coordinating force were the Sabbatian networks in Israel and the United States which by then had infiltrated the entire US government, military and intelligence system. The real name of the American Deep State is 'Sabbatian State'. Israel is a tiny country of only nine million people, but it is one of the global centres of cyber operations and fast catching Silicon Valley in importance to the Cult. Israel is known as the 'start-up nation' for all the cyber companies spawned there with the Sabbatian specialisation of 'cyber security' that I mentioned earlier which gives those companies access to computer systems of their clients in real time through 'backdoors' written into the coding when security software is downloaded. The Sabbatian centre of cyber operations outside Silicon Valley is the Israeli military Cyber Intelligence Unit, the biggest infrastructure project in Israel's history, headquartered in the desert-city of Beersheba and involving some 20,000 'cyber soldiers'. Here are located a literal army of Internet trolls scanning social media, forums and comment lists for anyone challenging the Cult agenda. The UK military has something similar with its 77th Brigade and associated operations. The Beersheba complex includes research and development centres for other Cult operations such as Intel, Microsoft, IBM, Google, Apple, Hewlett-Packard, Cisco Systems, Facebook and Motorola. Techcrunch.com ran an article about the Beersheba global Internet technology centre headlined 'Israel's desert city of Beersheba is turning into a cybertech oasis':

> The military's massive relocation of its prestigious technology units, the presence of multinational and local companies, a close proximity to Ben Gurion University and generous government subsidies are turning Beersheba into a major global cybertech hub. Beersheba has all of the ingredients of a vibrant security technology ecosystem, including Ben Gurion University with its graduate program in cybersecurity and Cyber Security Research Center, and the presence of companies such as EMC, Deutsche Telekom, PayPal, Oracle, IBM, and Lockheed Martin. It's also the future home of the INCB (Israeli National Cyber Bureau); offers a special income tax incentive for cyber security companies, and was the site for the relocation of the army's intelligence corps units.

Sabbatians have taken over the cyber world through the following process: They scan the schools for likely cyber talent and develop them at Ben Gurion University and their period of conscription in the Israeli Defense Forces when they are stationed at the Beersheba complex. When the cyber talented officially leave the army they are funded to start cyber companies with technology developed by themselves or given to them by the state. Much of this is stolen through backdoors of computer systems around the world with America top of the list. Others are sent off to Silicon Valley to start companies or join the major ones and so we have many major positions filled by apparently 'Jewish' but really Sabbatian operatives. Google, YouTube and Facebook are all run by 'Jewish' CEOs while Twitter is all but run by ultra-Zionist hedge-fund shark Paul Singer. At the centre of the Sabbatian global cyber web is the Israeli army's Unit 8200 which specialises in hacking into computer systems of other countries, inserting viruses, gathering information, instigating malfunction, and even taking control of them from a distance. A long list of Sabbatians involved with 9/11, Silicon Valley and Israeli cyber security companies are operatives of Unit 8200. This is not about Israel. It's about the Cult. Israel is planned to be a Smart Grid hub as with China and what is happening at Beersheba is not for the benefit of Jewish people who are treated disgustingly by the Sabbatian elite that control the country. A glance at the Nuremberg Codes will tell you that.

The story is much bigger than 'Covid', important as that is to where we are being taken. Now, though, it's time to really strap in. There's more … much more …

CHAPTER ELEVEN

Who controls the Cult?

Awake, arise or be forever fall'n
John Milton, *Paradise Lost*

I have exposed this far the level of the Cult conspiracy that operates in the world of the seen and within the global secret society and satanic network which operates in the shadows one step back from the seen. The story, however, goes much deeper than that.

The 'Covid' hoax is major part of the Cult agenda, but only part, and to grasp the biggest picture we have to expand our attention beyond the realm of human sight and into the infinity of possibility that we cannot see. It is from here, ultimately, that humanity is being manipulated into a state of total control by the force which dictates the actions of the Cult. How much of reality can we see? Next to damn all is the answer. We may appear to see all there is to see in the 'space' our eyes survey and observe, but little could be further from the truth. The human 'world' is only a tiny band of frequency that the body's visual and perceptual systems can decode into *perception* of a 'world'. According to mainstream science the electromagnetic spectrum is 0.005 percent of what exists in the Universe (Fig 10). The maximum estimate I have seen is 0.5 percent and either way it's miniscule. I say it is far, far, smaller even than 0.005 percent when you compare reality we see with the totality of reality that we don't. Now get this if you are new to such information: Visible light, the only band of frequency that we can see, is a *fraction* of the 0.005

percent (Fig 11 overleaf). Take this further and realise that our universe is one of infinite universes and that universes are only a fragment of overall reality – *infinite* reality. Then compare that with the almost infinitesimal frequency band of visible light or human sight. You see that humans are as near blind as it is possible to be without actually being so. Artist and filmmaker, Sergio Toporek, said:

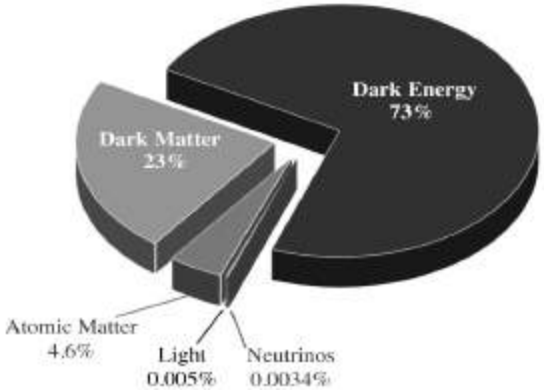

Figure 10: Humans can perceive such a tiny band of visual reality it's laughable.

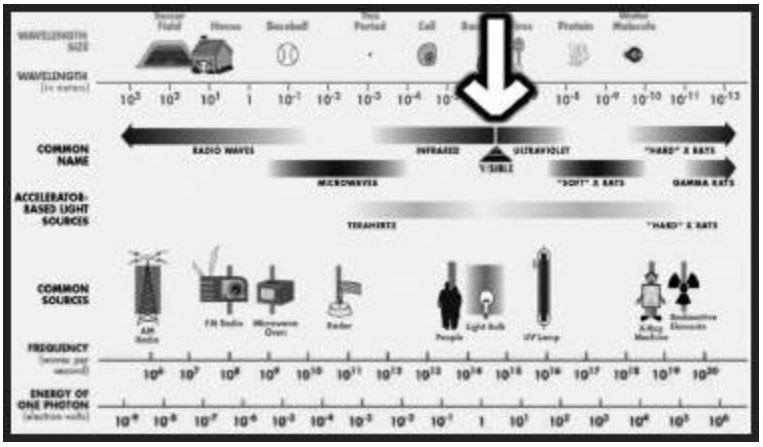

Figure 11: We can see a smear of the 0.005 percent electromagnetic spectrum, but we still know it all. Yep, makes sense.

Consider that you can see less than 1% of the electromagnetic spectrum and hear less than 1% of the acoustic spectrum. 90% of the cells in your body carry their own microbial DNA and are not 'you'. The atoms in your body are 99.9999999999999999% empty space and none of them are the ones you were born with ... Human beings have 46 chromosomes, two less than a potato.

The existence of the rainbow depends on the conical photoreceptors in your eyes; to animals without cones, the rainbow does not exist. So you don't just look at a rainbow, you create it. This is pretty amazing, especially considering that all the beautiful colours you see represent less than 1% of the electromagnetic spectrum.

Suddenly the 'world' of humans looks a very different place. Take into account, too, that Planet Earth when compared with the projected size of this single universe is the equivalent of a billionth of a pinhead. Imagine the ratio that would be when compared to infinite reality. To think that Christianity once insisted that Earth and humanity were the centre of everything. This background is vital if we are going to appreciate the nature of 'human' and how we can be manipulated by an unseen force. To human visual reality virtually *everything* is unseen and yet the prevailing perception within the institutions and so much of the public is that if we can't see it, touch it, hear it, taste it and smell it then it cannot exist. Such perception is indoctrinated and encouraged by the Cult and its agents because it isolates believers in the strictly limited, village-idiot, realm of the five senses where perceptions can be firewalled and information controlled. Most of those perpetuating the 'this-world-is-all-there-is' insanity are themselves indoctrinated into believing the same delusion. While major players and influencers know that official reality is laughable most of those in science, academia and medicine really believe the nonsense they peddle and teach succeeding generations. Those who challenge the orthodoxy are dismissed as nutters and freaks to protect the manufactured illusion from exposure. Observe the dynamic of the 'Covid' hoax and you will see how that takes the same form. The inner-circle psychopaths knows it's a gigantic scam, but almost the entirety of those imposing their fascist rules believe that 'Covid' is all that they're told it is.

Stolen identity

Ask people who they are and they will give you their name, place of birth, location, job, family background and life story. Yet that is not who they are – it is what they are *experiencing*. The difference is *absolutely crucial*. The true 'I', the eternal, infinite 'I', is consciousness,

a state of being aware. Forget 'form'. That is a vehicle for a brief experience. Consciousness does not come *from* the brain, but *through* the brain and even that is more symbolic than literal. We are awareness, pure awareness, and this is what withdraws from the body at what we call 'death' to continue our eternal beingness, *isness*, in other realms of reality within the limitlessness of infinity or the Biblical 'many mansions in my father's house'. Labels of a human life, man, woman, transgender, black, white, brown, nationality, circumstances and income are not who we are. They are what we are – awareness – is *experiencing* in a brief connection with a band of frequency we call 'human'. The labels are not the self; they are, to use the title of one of my books, a *Phantom* Self. I am not David Icke born in Leicester, England, on April 29th, 1952. I am the consciousness *having that experience*. The Cult and its non-human masters seek to convince us through the institutions of 'education', science, medicine, media and government that what we are *experiencing* is who we *are*. It's so easy to control and direct perception locked away in the bewildered illusions of the five senses with no expanded radar. Try, by contrast, doing the same with a humanity aware of its true self and its true power to consciously create its reality and experience. How is it possible to do this? We do it all day every day. If you perceive yourself as 'little me' with no power to impact upon your life and the world then your life experience will reflect that. You will hand the power you don't think you have to authority in all its forms which will use it to control your experience. This, in turn, will appear to confirm your perception of 'little me' in a self-fulfilling feedback loop. But that is what 'little me' really is – a *perception*. We are all 'big-me', infinite me, and the Cult has to make us forget that if its will is to prevail. We are therefore manipulated and pressured into self-identifying with human labels and not the consciousness/awareness *experiencing* those human labels.

The phenomenon of identity politics is a Cult-instigated manipulation technique to sub-divide previous labels into even smaller ones. A United States university employs this list of letters to

describe student identity: LGBTTQQFAGPBDSM or lesbian, gay, bisexual, transgender, transsexual, queer, questioning, flexual, asexual, gender-fuck, polyamorous, bondage/discipline, dominance/submission and sadism/masochism. I'm sure other lists are even longer by now as people feel the need to self-identity the 'I' with the minutiae of race and sexual preference. Wokers programmed by the Cult for generations believe this is about 'inclusivity' when it's really the Cult locking them away into smaller and smaller versions of Phantom Self while firewalling them from the influence of their true self, the infinite, eternal 'I'. You may notice that my philosophy which contends that we are all unique points of attention/awareness within the same infinite whole or Oneness is the ultimate non-racism. The very sense of Oneness makes the judgement of people by their body-type, colour or sexuality utterly ridiculous and confirms that racism has no understanding of reality (including anti-white racism). Yet despite my perception of life Cult agents and fast-asleep Wokers label me racist to discredit my information while they are themselves phenomenally racist and sexist. All they see is race and sexuality and they judge people as good or bad, demons or untouchables, by their race and sexuality. All they see is *Phantom Self* and perceive themselves in terms of Phantom Self. They are pawns and puppets of the Cult agenda to focus attention and self-identity in the five senses and play those identities against each other to divide and rule. Columbia University has introduced segregated graduations in another version of social distancing designed to drive people apart and teach them that different racial and cultural groups have nothing in common with each other. The last thing the Cult wants is unity. Again the pump-primers of this will be Cult operatives in the knowledge of what they are doing, but the rest are just the Phantom Self blind leading the Phantom Self blind. We *do* have something in common – we are all *the same consciousness* having different temporary experiences.

What is this 'human'?

Yes, what *is* 'human'? That is what we are supposed to be, right? I mean 'human'? True, but 'human' is the experience not the 'I'. Break it down to basics and 'human' is the way that information is processed. If we are to experience and interact with this band of frequency we call the 'world' we must have a vehicle that operates within that band of frequency. Our consciousness in its prime form cannot do that; it is way beyond the frequency of the human realm. My consciousness or awareness could not tap these keys and pick up the cup in front of me in the same way that radio station A cannot interact with radio station B when they are on different frequencies. The human body is the means through which we have that interaction. I have long described the body as a biological computer which processes information in a way that allows consciousness to experience this reality. The body is a receiver, transmitter and processor of information in a particular way that we call human. We visually perceive only the world of the five senses in a wakened state – that is the limit of the body's visual decoding system. In truth it's not even visual in the way we experience 'visual reality' as I will come to in a moment. We are 'human' because the body processes the information sources of human into a reality and behaviour system that we *perceive* as human. Why does an elephant act like an elephant and not like a human or a duck? The elephant's biological computer is a different information field and processes information according to that program into a visual and behaviour type we call an elephant. The same applies to everything in our reality. These body information fields are perpetuated through procreation (like making a copy of a software program). The Cult wants to break that cycle and intervene technologically to transform the human information field into one that will change what we call humanity. If it can change the human information field it will change the way that field processes information and change humanity both 'physically' and psychologically. Hence the *messenger* (information) RNA 'vaccines' and so much more that is targeting human genetics by changing the body's information – *messaging* – construct through food, drink, radiation, toxicity and other means.

Reality that we experience is nothing like reality as it really is in the same way that the reality people experience in virtual reality games is not the reality they are really living in. The game is only a decoded source of information that appears to be a reality. Our world is also an information construct – a *simulation* (more later). In its base form our reality is a wavefield of information much the same in theme as Wi-Fi. The five senses decode wavefield information into electrical information which they communicate to the brain to decode into holographic (illusory 'physical') information. Different parts of the brain specialise in decoding different senses and the information is fused into a reality that appears to be outside of us but is really inside the brain and the genetic structure in general (Fig 12 overleaf). DNA is a receiver-transmitter of information and a vital part of this decoding process and the body's connection to other realities. Change DNA and you change the way we decode and connect with reality – see 'Covid vaccines'. Think of computers decoding Wi-Fi. You have information encoded in a radiation field and the computer decodes that information into a very different form on the screen. You can't see the Wi-Fi until its information is made manifest on the screen and the information on the screen is inside the computer and not outside. I have just described how we decode the 'human world'. All five senses decode the waveform 'Wi-Fi' field into electrical signals and the brain (computer) constructs reality inside the brain and not outside – 'You don't just look at a rainbow, you create it'. Sound is a simple example. We don't hear sound until the brain decodes it. Waveform sound waves are picked up by the hearing sense and communicated to the brain in an electrical form to be decoded into the sounds that we hear. Everything we hear is inside the brain along with everything we see, feel, smell and taste. Words and language are waveform fields generated by our vocal chords which pass through this process until they are decoded by the brain into words that we hear. Different languages are different frequency fields or sound waves generated by vocal chords. Late British philosopher Alan Watts said:

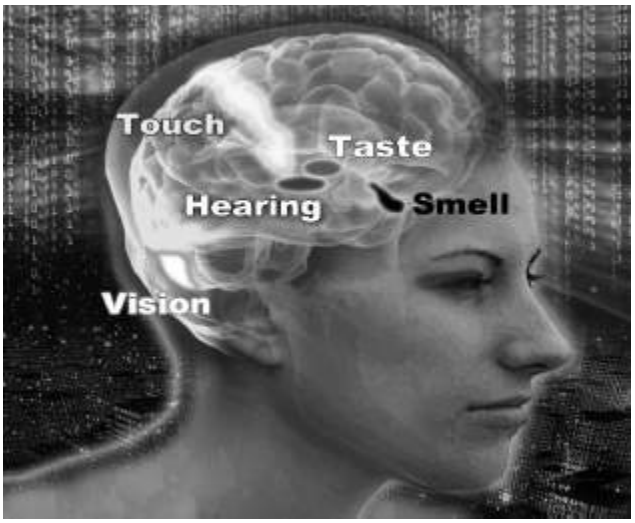

Figure 12: The brain receives information from the five senses and constructs from that our perceived reality.

[Without the brain] the world is devoid of light, heat, weight, solidity, motion, space, time or any other imaginable feature. All these phenomena are interactions, or transactions, of vibrations with a certain arrangement of neurons.

That's exactly what they are and scientist Robert Lanza describes in his book, *Biocentrism*, how we decode electromagnetic waves and energy into visual and 'physical' experience. He uses the example of a flame emitting photons, electromagnetic energy, each pulsing electrically and magnetically:

… these … invisible electromagnetic waves strike a human retina, and if (and only if) the waves happen to measure between 400 and 700 nano meters in length from crest to crest, then their energy is just right to deliver a stimulus to the 8 million cone-shaped cells in the retina.

Each in turn send an electrical pulse to a neighbour neuron, and on up the line this goes, at 250 mph, until it reaches the … occipital lobe of the brain, in the back of the head. There, a cascading complex of neurons fire from the incoming stimuli, and we subjectively perceive this experience as a yellow brightness occurring in a place we have been conditioned to call the 'external world'.

You hear what you decode

If a tree falls or a building collapses they make no noise unless someone is there to decode the energetic waves generated by the disturbance into what we call sound. Does a falling tree make a noise? Only if you hear it – *decode* it. Everything in our reality is a frequency field of information operating within the overall 'Wi-Fi' field that I call The Field. A vibrational disturbance is generated in The Field by the fields of the falling tree or building. These disturbance waves are what we decode into the sound of them falling. If no one is there to do that then neither will make any noise. Reality is created by the observer – *decoder* – and the *perceptions* of the observer affect the decoding process. For this reason different people – different *perceptions* – will perceive the same reality or situation in a different way. What one may perceive as a nightmare another will see as an opportunity. The question of why the Cult is so focused on controlling human perception now answers itself. All experienced reality is the act of decoding and we don't experience Wi-Fi until it is decoded on the computer screen. The sight and sound of an Internet video is encoded in the Wi-Fi all around us, but we don't see or hear it until the computer decodes that information. Taste, smell and touch are all phenomena of the brain as a result of the same process. We don't taste, smell or feel anything except in the brain and there are pain relief techniques that seek to block the signal from the site of discomfort to the brain because if the brain doesn't decode that signal we don't feel pain. Pain is in the brain and only appears to be at the point of impact thanks to the feedback loop between them. We don't see anything until electrical information from the sight senses is decoded in an area at the back of the brain. If that area is damaged we can go blind when our eyes are perfectly okay. So why do we go blind if we damage an eye? We damage the information processing between the waveform visual information and the visual decoding area of the brain. If information doesn't reach the brain in a form it can decode then we can't see the visual reality that it represents. What's more the brain is decoding only a fraction of the information it receives and the rest is absorbed by the

sub-conscious mind. This explanation is from the science magazine, *Wonderpedia*:

> Every second, 11 million sensations crackle along these [brain] pathways ... The brain is confronted with an alarming array of images, sounds and smells which it rigorously filters down until it is left with a manageable list of around 40. Thus 40 sensations per second make up what we perceive as reality.

The 'world' is not what people are told to believe that is it and the inner circles of the Cult *know that*.

Illusory 'physical' reality

We can only see a smear of 0.005 percent of the Universe which is only one of a vast array of universes – 'mansions' – within infinite reality. Even then the brain decodes only 40 pieces of information ('sensations') from a potential *11 million* that we receive every second. Two points strike you from this immediately: The sheer breathtaking stupidity of believing we know anything so rigidly that there's nothing more to know; and the potential for these processes to be manipulated by a malevolent force to control the reality of the population. One thing I can say for sure with no risk of contradiction is that when you can perceive an almost indescribable fraction of infinite reality there is always more to know as in tidal waves of it. Ancient Greek philosopher Socrates was so right when he said that wisdom is to know how little we know. How obviously true that is when you think that we are experiencing a physical world of solidity that is neither physical nor solid and a world of apartness when everything is connected. Cult-controlled 'science' dismisses the so-called 'paranormal' and all phenomena related to that when the 'para'-normal is perfectly normal and explains the alleged 'great mysteries' which dumbfound scientific minds. There is a reason for this. A 'scientific mind' in terms of the mainstream is a material mind, a five-sense mind imprisoned in see it, touch it, hear it, smell it and taste it. Phenomena and happenings that can't be explained that way leave the 'scientific mind' bewildered and the rule is that if they

can't account for why something is happening then it can't, by definition, be happening. I beg to differ. Telepathy is thought waves passing through The Field (think wave disturbance again) to be decoded by someone able to connect with that wavelength (information). For example: You can pick up the thought waves of a friend at any distance and at the very least that will bring them to mind. A few minutes later the friend calls you. 'My god', you say, 'that's incredible – I was just thinking of you.' Ah, but *they* were thinking of *you* before they made the call and that's what you decoded. Native peoples not entrapped in five-sense reality do this so well it became known as the 'bush telegraph'. Those known as psychics and mediums (genuine ones) are doing the same only across dimensions of reality. 'Mind over matter' comes from the fact that matter and mind are the *same*. The state of one influences the state of the other. Indeed one *and* the other are illusions. They are aspects of the same field. Paranormal phenomena are all explainable so why are they still considered 'mysteries' or not happening? Once you go down this road of understanding you begin to expand awareness beyond the five senses and that's the nightmare for the Cult.

Figure 13: Holograms are not solid, but the best ones appear to be.

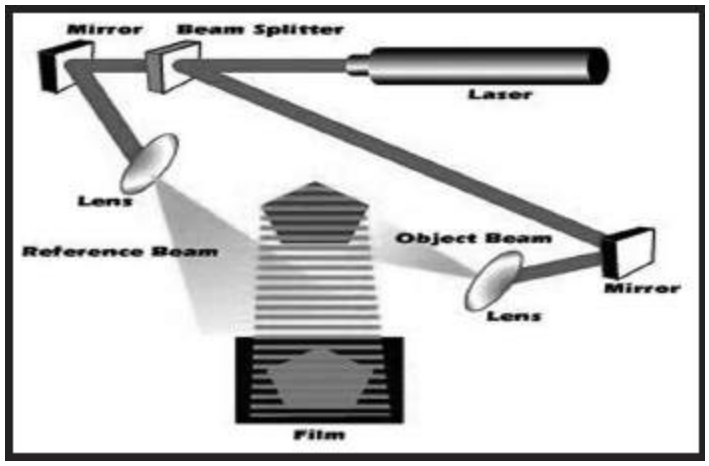

Figure 14: How holograms are created by capturing a waveform version of the subject image.

Holographic 'solidity'

Our reality is not solid, it is holographic. We are now well aware of holograms which are widely used today. Two-dimensional information is decoded into a three-dimensional reality that is not solid although can very much appear to be (Fig 13). Holograms are created with a laser divided into two parts. One goes directly onto a holographic photographic print ('reference beam') and the other takes a waveform image of the subject ('working beam') before being directed onto the print where it 'collides' with the other half of the laser (Fig 14). This creates a *waveform* interference pattern which contains the wavefield information of whatever is being photographed (Fig 15 overleaf). The process can be likened to dropping pebbles in a pond. Waves generated by each one spread out across the water to collide with the others and create a wave representation of where the stones fell and at what speed, weight and distance. A waveform interference pattern of a hologram is akin to the waveform information in The Field which the five senses decode into electrical signals to be decoded by the brain into a holographic illusory 'physical' reality. In the same way when a laser (think human attention) is directed at the waveform interference pattern a three-dimensional version of the subject is projected into apparently 'solid' reality (Fig 16). An amazing trait of holograms reveals more 'paranormal mysteries'. Information of the *whole*

hologram is encoded in waveform in every part of the interference pattern by the way they are created. This means that every *part* of a hologram is a smaller version of the whole. Cut the interference wave-pattern into four and you won't get four parts of the image. You get quarter-sized versions of the *whole* image. The body is a hologram and the same applies. Here we have the basis of acupuncture, reflexology and other forms of healing which identify representations of the whole body in all of the parts, hands, feet, ears, everywhere. Skilled palm readers can do what they do because the information of whole body is encoded in the hand. The concept of as above, so below, comes from this.

Figure 15: A waveform interference pattern that holds the information that transforms into a hologram.

Figure 16: Holographic people including 'Elvis' holographically inserted to sing a duet with Celine Dion.

The question will be asked of why, if solidity is illusory, we can't just walk through walls and each other. The resistance is not solid against solid; it is electromagnetic field against electromagnetic field and we decode this into the *experience* of solid against solid. We should also not underestimate the power of belief to dictate reality. What you believe is impossible *will be*. Your belief impacts on your decoding processes and they won't decode what you think is impossible. What we believe we perceive and what we perceive we experience. 'Can't dos' and 'impossibles' are like a firewall in a computer system that won't put on the screen what the firewall blocks. How vital that is to understanding how human experience has been hijacked. I explain in *The Answer*, *Everything You Need To Know But Have Never Been Told* and other books a long list of 'mysteries' and 'paranormal' phenomena that are not mysterious and perfectly normal once you realise what reality is and how it works. 'Ghosts' can be seen to pass through 'solid' walls because the walls are not solid and the ghost is a discarnate entity operating on a frequency so different to that of the wall that it's like two radio stations sharing the same space while never interfering with each other. I have seen ghosts do this myself. The apartness of people and objects is also an illusion. Everything is connected by the Field like all sea life is connected by the sea. It's just that within the limits of our visual reality we only 'see' holographic information and not the field of information that connects everything and from which the holographic world is made manifest. If you can only see holographic 'objects' and not the field that connects them they will appear to you as unconnected to each other in the same way that we see the computer while not seeing the Wi-Fi.

What you don't know *can* hurt you

Okay, we return to those 'two worlds' of human society and the Cult with its global network of interconnecting secret societies and satanic groups which manipulate through governments, corporations, media, religions, etc. The fundamental difference between them is *knowledge*. The idea has been to keep humanity

ignorant of the plan for its total enslavement underpinned by a crucial ignorance of reality – who we are and where we are – and how we interact with it. 'Human' should be the interaction between our expanded eternal consciousness and the five-sense body experience. We are meant to be *in* this world in terms of the five senses but not *of* this world in relation to our greater consciousness and perspective. In that state we experience the small picture of the five senses within the wider context of the big picture of awareness beyond the five senses. Put another way the five senses see the dots and expanded awareness connects them into pictures and patterns that give context to the apparently random and unconnected. Without the context of expanded awareness the five senses see only apartness and randomness with apparently no meaning. The Cult and its other-dimensional controllers seek to intervene in the frequency realm where five-sense reality is supposed to connect with expanded reality and to keep the two apart (more on this in the final chapter). When that happens five-sense mental and emotional processes are no longer influenced by expanded awareness, or the True 'I', and instead are driven by the isolated perceptions of the body's decoding systems. They are in the world *and* of it. Here we have the human plight and why humanity with its potential for infinite awareness can be so easily manipulatable and descend into such extremes of stupidity.

Once the Cult isolates five-sense mind from expanded awareness it can then program the mind with perceptions and beliefs by controlling information that the mind receives through the 'education' system of the formative years and the media perceptual bombardment and censorship of an entire lifetime. Limit perception and a sense of the possible through limiting knowledge by limiting and skewing information while censoring and discrediting that which could set people free. As the title of another of my books says *… And The Truth Shall Set You Free*. For this reason the last thing the Cult wants in circulation is the truth about anything – especially the reality of the eternal 'I' – and that's why it is desperate to control information. The Cult knows that information becomes perception

which becomes behaviour which, collectively, becomes human society. Cult-controlled and funded mainstream 'science' denies the existence of an eternal 'I' and seeks to dismiss and trash all evidence to the contrary. Cult-controlled mainstream religion has a version of 'God' that is little more than a system of control and dictatorship that employs threats of damnation in an afterlife to control perceptions and behaviour in the here and now through fear and guilt. Neither is true and it's the 'neither' that the Cult wishes to suppress. This 'neither' is that everything is an expression, a point of attention, within an infinite state of consciousness which is the real meaning of the term 'God'.

Perceptual obsession with the 'physical body' and five-senses means that 'God' becomes personified as a bearded bloke sitting among the clouds or a raging bully who loves us if we do what 'he' wants and condemns us to the fires of hell if we don't. These are no more than a 'spiritual' fairy tales to control and dictate events and behaviour through fear of this 'God' which has bizarrely made 'God-fearing' in religious circles a state to be desired. I would suggest that fearing *anything* is not to be encouraged and celebrated, but rather deleted. You can see why 'God fearing' is so beneficial to the Cult and its religions when *they* decide what 'God' wants and what 'God' demands (the Cult demands) that everyone do. As the great American comedian Bill Hicks said satirising a Christian zealot: 'I think what God meant to say.' How much of this infinite awareness ('God') that we access is decided by how far we choose to expand our perceptions, self-identity and sense of the possible. The scale of self-identity reflects itself in the scale of awareness that we can connect with and are influenced by – how much knowing and insight we have instead of programmed perception. You cannot expand your awareness into the infinity of possibility when you believe that you are little me Peter the postman or Mary in marketing and nothing more. I'll deal with this in the concluding chapter because it's crucial to how we turnaround current events.

Where the Cult came from

When I realised in the early 1990s there was a Cult network behind global events I asked the obvious question: When did it start? I took it back to ancient Rome and Egypt and on to Babylon and Sumer in Mesopotamia, the 'Land Between Two Rivers', in what we now call Iraq. The two rivers are the Tigris and Euphrates and this region is of immense historical and other importance to the Cult, as is the land called Israel only 550 miles away by air. There is much more going with deep esoteric meaning across this whole region. It's not only about 'wars for oil'. Priceless artefacts from Mesopotamia were stolen or destroyed after the American and British invasion of Iraq in 2003 justified by the lies of Boy Bush and Tony Blair (their Cult masters) about non-existent 'weapons of mass destruction'. Mesopotamia was the location of Sumer (about 5,400BC to 1,750BC), and Babylon (about 2,350BC to 539BC). Sabbatians may have become immensely influential in the Cult in modern times but they are part of a network that goes back into the mists of history. Sumer is said by historians to be the 'cradle of civilisation'. I disagree. I say it was the re-start of what we call human civilisation after cataclysmic events symbolised in part as the 'Great Flood' destroyed the world that existed before. These fantastic upheavals that I have been describing in detail in the books since the early1990s appear in accounts and legends of ancient cultures across the world and they are supported by geological and biological evidence. Stone tablets found in Iraq detailing the Sumer period say the cataclysms were caused by non-human 'gods' they call the Anunnaki. These are described in terms of extraterrestrial visitations in which knowledge supplied by the Anunnaki is said to have been the source of at least one of the world's oldest writing systems and developments in astronomy, mathematics and architecture that were way ahead of their time. I have covered this subject at length in *The Biggest Secret* and *Children of the Matrix* and the same basic 'Anunnaki' story can be found in Zulu accounts in South Africa where the late and very great Zulu high shaman Credo Mutwa told me that the Sumerian Anunnaki were known by Zulus as the Chitauri or 'children of the serpent'. See my six-hour video interview with Credo on this subject entitled *The*

Reptilian Agenda recorded at his then home near Johannesburg in 1999 which you can watch on the Ickonic media platform.

The Cult emerged out of Sumer, Babylon and Egypt (and elsewhere) and established the Roman Empire before expanding with the Romans into northern Europe from where many empires were savagely imposed in the form of Cult-controlled societies all over the world. Mass death and destruction was their calling card. The Cult established its centre of operations in Europe and European Empires were Cult empires which allowed it to expand into a global force. Spanish and Portuguese colonialists headed for Central and South America while the British and French targeted North America. Africa was colonised by Britain, France, Belgium, the Netherlands, Portugal, Spain, Italy, and Germany. Some like Britain and France moved in on the Middle East. The British Empire was by far the biggest for a simple reason. By now Britain was the headquarters of the Cult from which it expanded to form Canada, the United States, Australia and New Zealand. The Sun never set on the British Empire such was the scale of its occupation. London remains a global centre for the Cult along with Rome and the Vatican although others have emerged in Israel and China. It is no accident that the 'virus' is alleged to have come out of China while Italy was chosen as the means to terrify the Western population into compliance with 'Covid' fascism. Nor that Israel has led the world in 'Covid' fascism and mass 'vaccination'.

You would think that I would mention the United States here, but while it has been an important means of imposing the Cult's will it is less significant than would appear and is currently in the process of having what power it does have deleted. The Cult in Europe has mostly loaded the guns for the US to fire. America has been controlled from Europe from the start through Cult operatives in Britain and Europe. The American Revolution was an illusion to make it appear that America was governing itself while very different forces were pulling the strings in the form of Cult families such as the Rothschilds through the Rockefellers and other subordinates. The Rockefellers are extremely close to Bill Gates and

established both scalpel and drug 'medicine' and the World Health Organization. They play a major role in the development and circulation of vaccines through the Rockefeller Foundation on which Bill Gates said his Foundation is based. Why wouldn't this be the case when the Rockefellers and Gates are on the same team? Cult infiltration of human society goes way back into what we call history and has been constantly expanding and centralising power with the goal of establishing a global structure to dictate everything. Look how this has been advanced in great leaps with the 'Covid' hoax.

The non-human dimension

I researched and observed the comings and goings of Cult operatives through the centuries and even thousands of years as they were born, worked to promote the agenda within the secret society and satanic networks, and then died for others to replace them. Clearly there had to be a coordinating force that spanned this entire period while operatives who would not have seen the end goal in their lifetimes came and went advancing the plan over millennia. I went in search of that coordinating force with the usual support from the extraordinary synchronicity of my life which has been an almost daily experience since 1990. I saw common themes in religious texts and ancient cultures about a non-human force manipulating human society from the hidden. Christianity calls this force Satan, the Devil and demons; Islam refers to the Jinn or Djinn; Zulus have their Chitauri (spelt in other ways in different parts of Africa); and the Gnostic people in Egypt in the period around and before 400AD referred to this phenomena as the 'Archons', a word meaning rulers in Greek. Central American cultures speak of the 'Predators' among other names and the same theme is everywhere. I will use 'Archons' as a collective name for all of them. When you see how their nature and behaviour is described all these different sources are clearly talking about the same force. Gnostics described the Archons in terms of 'luminous fire' while Islam relates the Jinn to 'smokeless fire'. Some refer to beings in form that could occasionally be seen, but the most common of common theme is that they operate from

unseen realms which means almost all existence to the visual processes of humans. I had concluded that this was indeed the foundation of human control and that the Cult was operating within the human frequency band on behalf of this hidden force when I came across the writings of Gnostics which supported my conclusions in the most extraordinary way.

A sealed earthen jar was found in 1945 near the town of Nag Hammadi about 75-80 miles north of Luxor on the banks of the River Nile in Egypt. Inside was a treasure trove of manuscripts and texts left by the Gnostic people some 1,600 years earlier. They included 13 leather-bound papyrus codices (manuscripts) and more than 50 texts written in Coptic Egyptian estimated to have been hidden in the jar in the period of 400AD although the source of the information goes back much further. Gnostics oversaw the Great or Royal Library of Alexandria, the fantastic depository of ancient texts detailing advanced knowledge and accounts of human history. The Library was dismantled and destroyed in stages over a long period with the death-blow delivered by the Cult-established Roman Church in the period around 415AD. The Church of Rome was the Church of Babylon relocated as I said earlier. Gnostics were not a race. They were a way of perceiving reality. Whenever they established themselves and their information circulated the terrorists of the Church of Rome would target them for destruction. This happened with the Great Library and with the Gnostic Cathars who were burned to death by the psychopaths after a long period of oppression at the siege of the Castle of Monségur in southern France in 1244. The Church has always been terrified of Gnostic information which demolishes the official Christian narrative although there is much in the Bible that supports the Gnostic view if you read it in another way. To anyone studying the texts of what became known as the Nag Hammadi Library it is clear that great swathes of Christian and Biblical belief has its origin with Gnostics sources going back to Sumer. Gnostic themes have been twisted to manipulate the perceived reality of Bible believers. Biblical texts have been in the open for centuries where they could be changed while Gnostic

documents found at Nag Hammadi were sealed away and untouched for 1,600 years. What you see is what they wrote.

Use your *pneuma* not your *nous*

Gnosticism and Gnostic come from 'gnosis' which means knowledge, or rather *secret* knowledge, in the sense of spiritual awareness – knowledge about reality and life itself. The desperation of the Cult's Church of Rome to destroy the Gnostics can be understood when the knowledge they were circulating was the last thing the Cult wanted the population to know. Sixteen hundred years later the same Cult is working hard to undermine and silence me for the same reason. The dynamic between knowledge and ignorance is a constant. 'Time' appears to move on, but essential themes remain the same. We are told to 'use your nous', a Gnostic word for head/brain/intelligence. They said, however, that spiritual awakening or 'salvation' could only be secured by expanding awareness *beyond* what they called *nous* and into *pneuma* or Infinite Self. Obviously as I read these texts the parallels with what I have been saying since 1990 were fascinating to me. There is a universal truth that spans human history and in that case why wouldn't we be talking the same language 16 centuries apart? When you free yourself from the perception program of the five senses and explore expanded realms of consciousness you are going to connect with the same information no matter what the perceived 'era' within a manufactured timeline of a single and tiny range of manipulated frequency. Humans working with 'smart' technology or knocking rocks together in caves is only a timeline appearing to operate within the human frequency band. Expanded awareness and the knowledge it holds have always been there whether the era be Stone Age or computer age. We can only access that knowledge by opening ourselves to its frequency which the five-sense prison cell is designed to stop us doing. Gates, Fauci, Whitty, Vallance, Zuckerberg, Brin, Page, Wojcicki, Bezos, and all the others behind the 'Covid' hoax clearly have a long wait before their range of frequency can make that connection given that an open heart is

crucial to that as we shall see. Instead of accessing knowledge directly through expanded awareness it is given to Cult operatives by the secret society networks of the Cult where it has been passed on over thousands of years outside the public arena. Expanded realms of consciousness is where great artists, composers and writers find their inspiration and where truth awaits anyone open enough to connect with it. We need to go there fast.

Archon hijack

A fifth of the Nag Hammadi texts describe the existence and manipulation of the Archons led by a 'Chief Archon' they call 'Yaldabaoth', or the 'Demiurge', and this is the Christian 'Devil', 'Satan', 'Lucifer', and his demons. Archons in Biblical symbolism are the 'fallen ones' which are also referred to as fallen angels after the angels expelled from heaven according to the Abrahamic religions of Judaism, Christianity and Islam. These angels are claimed to tempt humans to 'sin' ongoing and you will see how accurate that symbolism is during the rest of the book. The theme of 'original sin' is related to the 'Fall' when Adam and Eve were 'tempted by the serpent' and fell from a state of innocence and 'obedience' (connection) with God into a state of disobedience (disconnection). The Fall is said to have brought sin into the world and corrupted everything including human nature. Yaldabaoth, the 'Lord Archon', is described by Gnostics as a 'counterfeit spirit', 'The Blind One', 'The Blind God', and 'The Foolish One'. The Jewish name for Yaldabaoth in Talmudic writings is Samael which translates as 'Poison of God', or 'Blindness of God'. You see the parallels. Yaldabaoth in Islamic belief is the Muslim Jinn devil known as Shaytan – Shaytan is Satan as the same themes are found all over the world in every religion and culture. The 'Lord God' of the Old Testament is the 'Lord Archon' of Gnostic manuscripts and that's why he's such a bloodthirsty bastard. Satan is known by Christians as 'the Demon of Demons' and Gnostics called Yaldabaoth the 'Archon of Archons'. Both are known as 'The Deceiver'. We are talking about the same 'bloke' for sure and these common themes

using different names, storylines and symbolism tell a common tale of the human plight.

Archons are referred to in Nag Hammadi documents as mind parasites, inverters, guards, gatekeepers, detainers, judges, pitiless ones and deceivers. The 'Covid' hoax alone is a glaring example of all these things. The Biblical 'God' is so different in the Old and New Testaments because they are not describing the same phenomenon. The vindictive, angry, hate-filled, 'God' of the Old Testament, known as Yahweh, is Yaldabaoth who is depicted in Cult-dictated popular culture as the 'Dark Lord', 'Lord of Time', Lord (Darth) Vader and Dormammu, the evil ruler of the 'Dark Dimension' trying to take over the 'Earth Dimension' in the Marvel comic movie, *Dr Strange*. Yaldabaoth is both the Old Testament 'god' and the Biblical 'Satan'. Gnostics referred to Yaldabaoth as the 'Great Architect of the Universe'and the Cult-controlled Freemason network calls their god 'the 'Great Architect of the Universe' (also Grand Architect). The 'Great Architect' Yaldabaoth is symbolised by the Cult as the all-seeing eye at the top of the pyramid on the Great Seal of the United States and the dollar bill. Archon is encoded in *arch*-itect as it is in *arch*-angels and *arch*-bishops. All religions have the theme of a force for good and force for evil in some sort of spiritual war and there is a reason for that – the theme is true. The Cult and its non-human masters are quite happy for this to circulate. They present themselves as the force for good fighting evil when they are really the force of evil (absence of love). The whole foundation of Cult modus operandi is inversion. They promote themselves as a force for good and anyone challenging them in pursuit of peace, love, fairness, truth and justice is condemned as a satanic force for evil. This has been the game plan throughout history whether the Church of Rome inquisitions of non-believers or 'conspiracy theorists' and 'anti-vaxxers' of today. The technique is the same whatever the timeline era.

Yaldabaoth is revolting (true)

Yaldabaoth and the Archons are said to have revolted against God with Yaldabaoth claiming to *be* God – the *All That Is*. The Old Testament 'God' (Yaldabaoth) demanded to be worshipped as such: ' *I am* the LORD, and there is none else, there is no God beside me' (Isaiah 45:5). I have quoted in other books a man who said he was the unofficial son of the late Baron Philippe de Rothschild of the Mouton-Rothschild wine producing estates in France who died in 1988 and he told me about the Rothschild 'revolt from God'. The man said he was given the name Phillip Eugene de Rothschild and we shared long correspondence many years ago while he was living under another identity. He said that he was conceived through 'occult incest' which (within the Cult) was 'normal and to be admired'. 'Phillip' told me about his experience attending satanic rituals with rich and famous people whom he names and you can see them and the wider background to Cult Satanism in my other books starting with *The Biggest Secret*. Cult rituals are interactions with Archontic 'gods'. 'Phillip' described Baron Philippe de Rothschild as 'a master Satanist and hater of God' and he used the same term 'revolt from God' associated with Yaldabaoth/Satan/Lucifer/the Devil in describing the Sabbatian Rothschild dynasty. 'I played a key role in my family's revolt from God', he said. That role was to infiltrate in classic Sabbatian style the Christian Church, but eventually he escaped the mind-prison to live another life. The Cult has been targeting religion in a plan to make worship of the Archons the global one-world religion. Infiltration of Satanism into modern 'culture', especially among the young, through music videos, stage shows and other means, is all part of this.

Nag Hammadi texts describe Yaldabaoth and the Archons in their prime form as energy – consciousness – and say they can take form if they choose in the same way that consciousness takes form as a human. Yaldabaoth is called 'formless' and represents a deeply inverted, distorted and chaotic state of consciousness which seeks to attached to humans and turn them into a likeness of itself in an attempt at assimilation. For that to happen it has to manipulate

humans into low frequency mental and emotional states that match its own. Archons can certainly appear in human form and this is the origin of the psychopathic personality. The energetic distortion Gnostics called Yaldabaoth *is* psychopathy. When psychopathic Archons take human form that human will be a psychopath as an expression of Yaldabaoth consciousness. Cult psychopaths are Archons in human form. The principle is the same as that portrayed in the 2009 *Avatar* movie when the American military travelled to a fictional Earth-like moon called Pandora in the Alpha Centauri star system to infiltrate a society of blue people, or Na'vi, by hiding within bodies that looked like the Na'vi. Archons posing as humans have a particular hybrid information field, part human, part Archon, (the ancient 'demigods') which processes information in a way that manifests behaviour to match their psychopathic evil, lack of empathy and compassion, and stops them being influenced by the empathy, compassion and love that a fully-human information field is capable of expressing. Cult bloodlines interbreed, be they royalty or dark suits, for this reason and you have their obsession with incest. Interbreeding with full-blown humans would dilute the Archontic energy field that guarantees psychopathy in its representatives in the human realm.

Gnostic writings say the main non-human forms that Archons take are *serpentine* (what I have called for decades 'reptilian' amid unbounded ridicule from the Archontically-programmed) and what Gnostics describe as 'an unborn baby or foetus with grey skin and dark, unmoving eyes'. This is an excellent representation of the ET 'Greys' of UFO folklore which large numbers of people claim to have seen and been abducted by – Zulu shaman Credo Mutwa among them. I agree with those that believe in extraterrestrial or interdimensional visitations today and for thousands of years past. No wonder with their advanced knowledge and technological capability they were perceived and worshipped as gods for technological and other 'miracles' they appeared to perform. Imagine someone arriving in a culture disconnected from the modern world with a smartphone and computer. They would be

seen as a 'god' capable of 'miracles'. The Renegade Mind, however, wants to know the source of everything and not only the way that source manifests as human or non-human. In the same way that a Renegade Mind seeks the original source material for the 'Covid virus' to see if what is claimed is true. The original source of Archons in form is consciousness – the distorted state of consciousness known to Gnostics as Yaldabaoth.

'Revolt from God' is energetic disconnection

Where I am going next will make a lot of sense of religious texts and ancient legends relating to 'Satan', Lucifer' and the 'gods'. Gnostic descriptions sync perfectly with the themes of my own research over the years in how they describe a consciousness distortion seeking to impose itself on human consciousness. I've referred to the core of infinite awareness in previous books as Infinite Awareness in Awareness of Itself. By that I mean a level of awareness that knows that it is all awareness and is aware of all awareness. From here comes the frequency of love in its true sense and balance which is what love is on one level – the balance of all forces into a single whole called Oneness and Isness. The more we disconnect from this state of love that many call 'God' the constituent parts of that Oneness start to unravel and express themselves as a part and not a whole. They become individualised as intellect, mind, selfishness, hatred, envy, desire for power over others, and such like. This is not a problem in the greater scheme in that 'God', the *All That Is*, can experience all these possibilities through different expressions of itself including humans. What we as expressions of the whole experience the *All That Is* experiences. We are the *All That Is* experiencing itself. As we withdraw from that state of Oneness we disconnect from its influence and things can get very unpleasant and very stupid. Archontic consciousness is at the extreme end of that. It has so disconnected from the influence of Oneness that it has become an inversion of unity and love, an inversion of everything, an inversion of life itself. Evil is appropriately live written backwards. Archontic consciousness is obsessed with death, an inversion of life,

and so its manifestations in Satanism are obsessed with death. They use inverted symbols in their rituals such as the inverted pentagram and cross. Sabbatians as Archontic consciousness incarnate invert Judaism and every other religion and culture they infiltrate. They seek disunity and chaos and they fear unity and harmony as they fear love like garlic to a vampire. As a result the Cult, Archons incarnate, act with such evil, psychopathy and lack of empathy and compassion disconnected as they are from the source of love. How could Bill Gates and the rest of the Archontic psychopaths do what they have to human society in the 'Covid' era with all the death, suffering and destruction involved and have no emotional consequence for the impact on others? Now you know. Why have Zuckerberg, Brin, Page, Wojcicki and company callously censored information warning about the dangers of the 'vaccine' while thousands have been dying and having severe, sometimes life-changing reactions? Now you know. Why have Tedros, Fauci, Whitty, Vallance and their like around the world been using case and death figures they're aware are fraudulent to justify lockdowns and all the deaths and destroyed lives that have come from that? Now you know. Why did Christian Drosten produce and promote a 'testing' protocol that he knew couldn't test for infectious disease which led to a global human catastrophe. Now you know. The Archontic mind doesn't give a shit (Fig 17). I personally think that Gates and major Cult insiders are a form of AI cyborg that the Archons want humans to become.

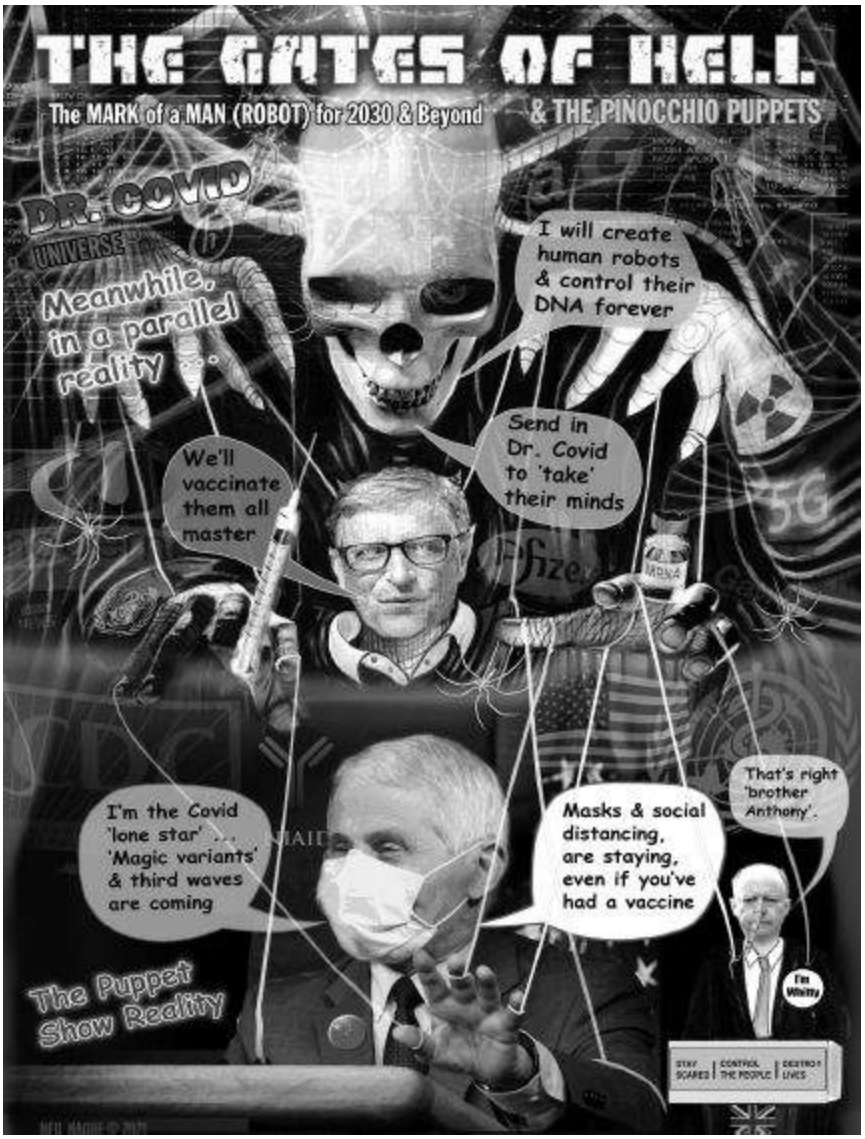
THE GATES OF HELL
The MARK of a MAN (ROBOT) for 2030 & Beyond
& THE PINOCCHIO PUPPETS
DR. COVID
UNIVERSE
Meanwhile, in a parallel reality ...
I will create human robots & control their DNA forever
Send in Dr. Covid to 'take' their minds
We'll vaccinate them all master
5G
I'm the Covid 'lone star' ... 'Magic variants' & third waves are coming
Masks & social distancing, are staying, even if you've had a vaccine
That's right 'brother Anthony'.
The Puppet Show Reality
I'm Whitty
STAY SCARED
CONTROL THE PEOPLE
DESTROY LIVES

Figure 17: Artist Neil Hague's version of the 'Covid' hierarchy.

Human batteries

A state of such inversion does have its consequences, however. The level of disconnection from the Source of All means that you withdraw from that source of energetic sustenance and creativity. This means that you have to find your own supply of energetic power and it has – *us*. When the Morpheus character in the first *Matrix* movie held up a battery he spoke a profound truth when he said: 'The Matrix is a computer-generated dream world built to keep us under control in order to change the human being into one of

these.' The statement was true in all respects. We do live in a technologically-generated virtual reality simulation (more very shortly) and we have been manipulated to be an energy source for Archontic consciousness. The Disney-Pixar animated movie *Monsters, Inc*. in 2001 symbolised the dynamic when monsters in their world had no energy source and they would enter the human world to terrify children in their beds, catch the child's scream, terror (low-vibrational frequencies), and take that energy back to power the monster world. The lead character you might remember was a single giant eye and the symbolism of the Cult's all-seeing eye was obvious. Every thought and emotion is broadcast as a frequency unique to that thought and emotion. Feelings of love and joy, empathy and compassion, are high, quick, frequencies while fear, depression, anxiety, suffering and hate are low, slow, dense frequencies. Which kind do you think Archontic consciousness can connect with and absorb? In such a low and dense frequency state there's no way it can connect with the energy of love and joy. Archons can only feed off energy compatible with their own frequency and they and their Cult agents want to delete the human world of love and joy and manipulate the transmission of low vibrational frequencies through low-vibrational human mental and emotional states. *We are their energy source*. Wars are energetic banquets to the Archons – a world war even more so – and think how much low-frequency mental and emotional energy has been generated from the consequences for humanity of the 'Covid' hoax orchestrated by Archons incarnate like Gates.

The ancient practice of human sacrifice 'to the gods', continued in secret today by the Cult, is based on the same principle. 'The gods' are Archontic consciousness in different forms and the sacrifice is induced into a state of intense terror to generate the energy the Archontic frequency can absorb. Incarnate Archons in the ritual drink the blood which contains an adrenaline they crave which floods into the bloodstream when people are terrorised. Most of the sacrifices, ancient and modern, are children and the theme of 'sacrificing young virgins to the gods' is just code for children. They

have a particular pre-puberty energy that Archons want more than anything and the energy of the young in general is their target. The California Department of Education wants students to chant the names of Aztec gods (Archontic gods) once worshipped in human sacrifice rituals in a curriculum designed to encourage them to 'challenge racist, bigoted, discriminatory, imperialist/colonial beliefs', join 'social movements that struggle for social justice', and 'build new possibilities for a post-racist, post-systemic racism society'. It's the usual Woke crap that inverts racism and calls it anti-racism. In this case solidarity with 'indigenous tribes' is being used as an excuse to chant the names of 'gods' to which people were sacrificed (and still are in secret). What an example of Woke's inability to see beyond black and white, us and them, They condemn the colonisation of these tribal cultures by Europeans (quite right), but those cultures sacrificing people including children to their 'gods', and mass murdering untold numbers as the Aztecs did, is just fine. One chant is to the Aztec god Tezcatlipoca who had a man sacrificed to him in the 5th month of the Aztec calendar. His heart was cut out and he was eaten. Oh, that's okay then. Come on children … after three … Other sacrificial 'gods' for the young to chant their allegiance include Quetzalcoatl, Huitzilopochtli and Xipe Totec. The curriculum says that 'chants, affirmations, and energizers can be used to bring the class together, build unity around ethnic studies principles and values, and to reinvigorate the class following a lesson that may be emotionally taxing or even when student engagement may appear to be low'. Well, that's the cover story, anyway. Chanting and mantras are the repetition of a particular frequency generated from the vocal cords and chanting the names of these Archontic 'gods' tunes you into their frequency. That is the last thing you want when it allows for energetic synchronisation, attachment and perceptual influence. Initiates chant the names of their 'Gods' in their rituals for this very reason.

Vampires of the Woke

Paedophilia is another way that Archons absorb the energy of children. Paedophiles possessed by Archontic consciousness are used as the conduit during sexual abuse for discarnate Archons to vampire the energy of the young they desire so much. Stupendous numbers of children disappear every year never to be seen again although you would never know from the media. Imagine how much low-vibrational energy has been generated by children during the 'Covid' hoax when so many have become depressed and psychologically destroyed to the point of killing themselves. Shocking numbers of children are now taken by the state from loving parents to be handed to others. I can tell you from long experience of researching this since 1996 that many end up with paedophiles and assets of the Cult through corrupt and Cult-owned social services which in the reframing era has hired many psychopaths and emotionless automatons to do the job. Children are even stolen to order using spurious reasons to take them by the corrupt and secret (because they're corrupt) 'family courts'. I have written in detail in other books, starting with *The Biggest Secret* in 1997, about the ubiquitous connections between the political, corporate, government, intelligence and military elites (Cult operatives) and Satanism and paedophilia. If you go deep enough both networks have an interlocking leadership. The Woke mentality has been developed by the Cult for many reasons: To promote almost every aspect of its agenda; to hijack the traditional political left and turn it fascist; to divide and rule; and to target agenda pushbackers. But there are other reasons which relate to what I am describing here. How many happy and joyful Wokers do you ever see especially at the extreme end? They are a mental and psychological mess consumed by emotional stress and constantly emotionally cocked for the next explosion of indignation at someone referring to a female as a female. They are walking, talking, batteries as Morpheus might say emitting frequencies which both enslave them in low-vibrational bubbles of perceptual limitation and feed the Archons. Add to this the hatred claimed to be love; fascism claimed to 'anti-fascism', racism claimed to be 'anti-racism';

exclusion claimed to inclusion; and the abuse-filled Internet trolling. You have a purpose-built Archontic energy system with not a wind turbine in sight and all founded on Archontic *inversion*. We have whole generations now manipulated to serve the Archons with their actions and energy. They will be doing so their entire adult lives unless they snap out of their Archon-induced trance. Is it really a surprise that Cult billionaires and corporations put so much money their way? Where is the energy of joy and laughter, including laughing at yourself which is confirmation of your own emotional security? Mark Twain said: 'The human race has one really effective weapon, and that is laughter.' We must use it all the time. Woke has destroyed comedy because it has no humour, no joy, sense of irony, or self-deprecation. Its energy is dense and intense. *Mmmmm*, lunch says the Archontic frequency. Rudolf Steiner (1861-1925) was the Austrian philosopher and famous esoteric thinker who established Waldorf education or Steiner schools to treat children like unique expressions of consciousness and not minds to be programmed with the perceptions determined by authority. I'd been writing about this energy vampiring for decades when I was sent in 2016 a quote by Steiner. He was spot on:

> There are beings in the spiritual realms for whom anxiety and fear emanating from human beings offer welcome food. When humans have no anxiety and fear, then these creatures starve. If fear and anxiety radiates from people and they break out in panic, then these creatures find welcome nutrition and they become more and more powerful. These beings are hostile towards humanity. Everything that feeds on negative feelings, on anxiety, fear and superstition, despair or doubt, are in reality hostile forces in super-sensible worlds, launching cruel attacks on human beings, while they are being fed ... These are exactly the feelings that belong to contemporary culture and materialism; because it estranges people from the spiritual world, it is especially suited to evoke hopelessness and fear of the unknown in people, thereby calling up the above mentioned hostile forces against them.

Pause for a moment from this perspective and reflect on what has happened in the world since the start of 2020. Not only will pennies drop, but billion dollar bills. We see the same theme from Don Juan Matus, a Yaqui Indian shaman in Mexico and the information source for Peruvian-born writer, Carlos Castaneda, who wrote a series of

books from the 1960s to 1990s. Don Juan described the force manipulating human society and his name for the Archons was the predator:

> We have a predator that came from the depths of the cosmos and took over the rule of our lives. Human beings are its prisoners. The predator is our lord and master. It has rendered us docile, helpless. If we want to protest, it suppresses our protest. If we want to act independently, it demands that we don't do so ... indeed we are held prisoner!
>
> They took us over because we are food to them, and they squeeze us mercilessly because we are their sustenance. Just as we rear chickens in coops, the predators rear us in human coops, humaneros. Therefore, their food is always available to them.
>
> Different cultures, different eras, same recurring theme.

The 'ennoia' dilemma

Nag Hammadi Gnostic manuscripts say that Archon consciousness has no 'ennoia'. This is directly translated as 'intentionality', but I'll use the term 'creative imagination'. The *All That Is* in awareness of itself is the source of all creativity – all possibility – and the more disconnected you are from that source the more you are subsequently denied 'creative imagination'. Given that Archon consciousness is almost entirely disconnected it severely lacks creativity and has to rely on far more mechanical processes of thought and exploit the creative potential of those that do have 'ennoia'. You can see cases of this throughout human society. Archon consciousness almost entirely dominates the global banking system and if we study how that system works you will appreciate what I mean. Banks manifest 'money' out of nothing by issuing lines of 'credit' which is 'money' that has never, does not, and will never exist except in theory. It's a confidence trick. If you think 'credit' figures-on-a-screen 'money' is worth anything you accept it as payment. If you don't then the whole system collapses through lack of confidence in the value of that 'money'. Archontic bankers with no 'ennoia' are 'lending' 'money' that doesn't exist to humans that *do* have creativity – those that have the inspired ideas and create businesses and products. Archon banking feeds off human creativity

which it controls through 'money' creation and debt. Humans have the creativity and Archons exploit that for their own benefit and control while having none themselves. Archon Internet platforms like Facebook claim joint copyright of everything that creative users post and while Archontic minds like Zuckerberg may officially head that company it will be human creatives on the staff that provide the creative inspiration. When you have limitless 'money' you can then buy other companies established by creative humans. Witness the acquisition record of Facebook, Google and their like. Survey the Archon-controlled music industry and you see non-creative dark suit executives making their fortune from the human creativity of their artists. The cases are endless. Research the history of people like Gates and Zuckerberg and how their empires were built on exploiting the creativity of others. Archon minds cannot create out of nothing, but they are skilled (because they have to be) in what Gnostic texts call 'countermimicry'. They can imitate, but not innovate. Sabbatians trawl the creativity of others through backdoors they install in computer systems through their cybersecurity systems. Archon-controlled China is globally infamous for stealing intellectual property and I remember how Hong Kong, now part of China, became notorious for making counterfeit copies of the creativity of others – 'countermimicry'. With the now pervasive and all-seeing surveillance systems able to infiltrate any computer you can appreciate the potential for Archons to vampire the creativity of humans. Author John Lamb Lash wrote in his book about the Nag Hammadi texts, *Not In His Image*:

> Although they cannot originate anything, because they lack the divine factor of ennoia (intentionality), Archons can imitate with a vengeance. Their expertise is simulation (HAL, virtual reality). The Demiurge [Yaldabaoth] fashions a heaven world copied from the fractal patterns [of the original] ... His construction is celestial kitsch, like the fake Italianate villa of a Mafia don complete with militant angels to guard every portal.

This brings us to something that I have been speaking about since the turn of the millennium. Our reality is a simulation; a virtual reality that we think is real. No, I'm not kidding.

Human reality? Well, virtually

I had pondered for years about whether our reality is 'real' or some kind of construct. I remembered being immensely affected on a visit as a small child in the late 1950s to the then newly-opened Planetarium on the Marylebone Road in London which is now closed and part of the adjacent Madame Tussauds wax museum. It was in the middle of the day, but when the lights went out there was the night sky projected in the Planetarium's domed ceiling and it appeared to be so real. The experience never left me and I didn't know why until around the turn of the millennium when I became certain that our 'night sky' and entire reality is a projection, a virtual reality, akin to the illusory world portrayed in the *Matrix* movies. I looked at the sky one day in this period and it appeared to me like the domed roof of the Planetarium. The release of the first *Matrix* movie in 1999 also provided a synchronistic and perfect visual representation of where my mind had been going for a long time. I hadn't come across the Gnostic Nag Hammadi texts then. When I did years later the correlation was once again astounding. As I read Gnostic accounts from 1,600 years and more earlier it was clear that they were describing the same simulation phenomenon. They tell how the Yaldabaoth 'Demiurge' and Archons created a 'bad copy' of original reality to rule over all that were captured by its illusions and the body was a prison to trap consciousness in the 'bad copy' fake reality. Read how Gnostics describe the 'bad copy' and update that to current times and they are referring to what we would call today a virtual reality simulation.

Author John Lamb Lash said 'the Demiurge fashions a heaven world copied from the fractal patterns' of the original through expertise in 'HAL' or virtual reality simulation. Fractal patterns are part of the energetic information construct of our reality, a sort of blueprint. If these patterns were copied in computer terms it would indeed give you a copy of a 'natural' reality in a non-natural frequency and digital form. The principle is the same as making a copy of a website. The original website still exists, but now you can change the copy version to make it whatever you like and it can

become very different to the original website. Archons have done this with our reality, a *synthetic* copy of prime reality that still exists beyond the frequency walls of the simulation. Trapped within the illusions of this synthetic Matrix, however, were and are human consciousness and other expressions of prime reality and this is why the Archons via the Cult are seeking to make the human body synthetic and give us synthetic AI minds to complete the job of turning the entire reality synthetic including what we perceive to be the natural world. To quote Kurzweil: 'Nanobots will infuse all the matter around us with information. Rocks, trees, everything will become these intelligent creatures.' Yes, *synthetic* 'creatures' just as 'Covid' and other genetically-manipulating 'vaccines' are designed to make the human body synthetic. From this perspective it is obvious why Archons and their Cult are so desperate to infuse synthetic material into every human with their 'Covid' scam.

Let there be (electromagnetic) light

Yaldabaoth, the force that created the simulation, or Matrix, makes sense of the Gnostic reference to 'The Great Architect' and its use by Cult Freemasonry as the name of its deity. The designer of the Matrix in the movies is called 'The Architect' and that trilogy is jam-packed with symbolism relating to these subjects. I have contended for years that the angry Old Testament God (Yaldabaoth) is the 'God' being symbolically 'quoted' in the opening of Genesis as 'creating the world'. This is not the creation of prime reality – it's the creation of the *simulation*. The Genesis 'God' says: 'Let there be Light: and there was light.' But what is this 'Light'? I have said for decades that the speed of light (186,000 miles per second) is not the fastest speed possible as claimed by mainstream science and is in fact the frequency walls or outer limits of the Matrix. You can't have a fastest or slowest anything within all possibility when everything is possible. The human body is encoded to operate within the speed of light or *within the simulation* and thus we see only the tiny frequency band of visible *light*. Near-death experiencers who perceive reality outside the body during temporary 'death' describe a very different

form of light and this is supported by the Nag Hammadi texts. Prime reality beyond the simulation ('Upper Aeons' to the Gnostics) is described as a realm of incredible beauty, bliss, love and harmony – a realm of 'watery light' that is so powerful 'there are no shadows'. Our false reality of Archon control, which Gnostics call the 'Lower Aeons', is depicted as a realm with a different kind of 'light' and described in terms of chaos, 'Hell', 'the Abyss' and 'Outer Darkness', where trapped souls are tormented and manipulated by demons (relate that to the 'Covid' hoax alone). The watery light theme can be found in near-death accounts and it is not the same as *simulation* 'light' which is electromagnetic or radiation light within the speed of light – the 'Lower Aeons'. Simulation 'light' is the 'luminous fire' associated by Gnostics with the Archons. The Bible refers to Yaldabaoth as 'that old serpent, called the Devil, and Satan, which deceiveth the whole world' (Revelation 12:9). I think that making a simulated copy of prime reality ('countermimicry') and changing it dramatically while all the time manipulating humanity to believe it to be real could probably meet the criteria of deceiving the whole world. Then we come to the Cult god Lucifer – the *Light Bringer*. Lucifer is symbolic of Yaldabaoth, the bringer of radiation light that forms the bad copy simulation within the speed of light. 'He' is symbolised by the lighted torch held by the Statue of Liberty and in the name 'Illuminati'. Sabbatian-Frankism declares that Lucifer is the true god and Lucifer is the real god of Freemasonry honoured as their 'Great or Grand Architect of the Universe' (simulation).

I would emphasise, too, the way Archontic technologically-generated luminous fire of radiation has deluged our environment since I was a kid in the 1950s and changed the nature of The Field with which we constantly interact. Through that interaction technological radiation is changing us. The Smart Grid is designed to operate with immense levels of communication power with 5G expanding across the world and 6G, 7G, in the process of development. Radiation is the simulation and the Archontic manipulation system. Why wouldn't the Archon Cult wish to unleash radiation upon us to an ever-greater extreme to form

Kurzweil's 'cloud'? The plan for a synthetic human is related to the need to cope with levels of radiation beyond even anything we've seen so far. Biological humans would not survive the scale of radiation they have in their script. The Smart Grid is a technological sub-reality within the technological simulation to further disconnect five-sense perception from expanded consciousness. It's a technological prison of the mind.

Infusing the 'spirit of darkness'

A recurring theme in religion and native cultures is the manipulation of human genetics by a non-human force and most famously recorded as the biblical 'sons of god' (the god*s* plural in the original) who interbred with the daughters of men. The Nag Hammadi *Apocryphon of John* tells the same story this way:

> He [Yaldabaoth] sent his angels [Archons/demons] to the daughters of men, that they might take some of them for themselves and raise offspring for their enjoyment. And at first they did not succeed. When they had no success, they gathered together again and they made a plan together ... And the angels changed themselves in their likeness into the likeness of their mates, filling them with the spirit of darkness, which they had mixed for them, and with evil ... And they took women and begot children out of the darkness according to the likeness of their spirit.

Possession when a discarnate entity takes over a human body is an age-old theme and continues today. It's very real and I've seen it. Satanic and secret society rituals can create an energetic environment in which entities can attach to initiates and I've heard many stories of how people have changed their personality after being initiated even into lower levels of the Freemasons. I have been inside three Freemasonic temples, one at a public open day and two by just walking in when there was no one around to stop me. They were in Ryde, the town where I live, Birmingham, England, when I was with a group, and Boston, Massachusetts. They all felt the same energetically – dark, dense, low-vibrational and sinister. Demonic attachment can happen while the initiate has no idea what is going on. To them it's just a ritual to get in the Masons and do a bit of good

business. In the far more extreme rituals of Satanism human possession is even more powerful and they are designed to make possession possible. The hierarchy of the Cult is dictated by the power and perceived status of the possessing Archon. In this way the Archon hierarchy becomes the Cult hierarchy. Once the entity has attached it can influence perception and behaviour and if it attaches to the extreme then so much of its energy (information) infuses into the body information field that the hologram starts to reflect the nature of the possessing entity. This is the *Exorcist* movie type of possession when facial features change and it's known as shapeshifting. Islam's Jinn are said to be invisible tricksters who change shape, 'whisper', confuse and take human form. These are all traits of the Archons and other versions of the same phenomenon. Extreme possession could certainty infuse the 'spirit of darkness' into a partner during sex as the Nag Hammadi texts appear to describe. Such an infusion can change genetics which is also energetic information. Human genetics is information and the 'spirit of darkness' is information. Mix one with the other and change must happen. Islam has the concept of a 'Jinn baby' through possession of the mother and by Jinn taking human form. There are many ways that human genetics can be changed and remember that Archons have been aware all along of advanced techniques to do this. What is being done in human society today – and far more – was known about by Archons at the time of the 'fallen ones' and their other versions described in religions and cultures.

Archons and their human-world Cult are obsessed with genetics as we see today and they know this dictates how information is processed into perceived reality during a human life. They needed to produce a human form that would decode the simulation and this is symbolically known as 'Adam and Eve' who left the 'garden' (prime reality) and 'fell' into Matrix reality. The simulation is not a 'physical' construct (there is no 'physical'); it is a source of information. Think Wi-Fi again. The simulation is an energetic field encoded with information and body-brain systems are designed to decode that information encoded in wave or frequency form which

is transmitted to the brain as electrical signals. These are decoded by the brain to construct our sense of reality – an illusory 'physical' world that only exists in the brain or the mind. Virtual reality games mimic this process using the same sensory decoding system. Information is fed to the senses to decode a virtual reality that can appear so real, but isn't (Figs 18 and 19). Some scientists believe – and I agree with them – that what we perceive as 'physical' reality only exists when we are looking or observing. The act of perception or focus triggers the decoding systems which turn waveform information into holographic reality. When we are not observing something our reality reverts from a holographic state to a waveform state. This relates to the same principle as a falling tree not making a noise unless someone is there to hear it or decode it. The concept makes sense from the simulation perspective. A computer is not decoding all the information in a Wi-Fi field all the time and only decodes or brings into reality on the screen that part of Wi-Fi that it's decoding – focusing upon – at that moment.

Figure 18: Virtual reality technology 'hacks' into the body's five-sense decoding system.

Figure 19: The result can be experienced as very 'real'.

Interestingly, Professor Donald Hoffman at the Department of Cognitive Sciences at the University of California, Irvine, says that our experienced reality is like a computer interface that shows us only the level with which we interact while hiding all that exists beyond it: 'Evolution shaped us with a user interface that hides the truth. Nothing that we see is the truth – the very language of space and time and objects is the wrong language to describe reality.' He is correct in what he says on so many levels. Space and time are not a universal reality. They are a phenomenon of decoded *simulation* reality as part of the process of enslaving our sense of reality. Near-death experiencers report again and again how space and time did not exist as we perceive them once they were free of the body – body decoding systems. You can appreciate from this why Archons and their Cult are so desperate to entrap human attention in the five senses where we are in the Matrix and of the Matrix. Opening your mind to expanded states of awareness takes you beyond the information confines of the simulation and you become aware of knowledge and insights denied to you before. This is what we call 'awakening' – *awakening from the Matrix* – and in the final chapter I will relate this to current events.

Where are the 'aliens'?

A simulation would explain the so-called 'Fermi Paradox' named after Italian physicist Enrico Fermi (1901-1954) who created the first nuclear reactor. He considered the question of why there is such a lack of extraterrestrial activity when there are so many stars and planets in an apparently vast universe; but what if the night sky that we see, or think we do, is a simulated projection as I say? If you control the simulation and your aim is to hold humanity fast in essential ignorance would you want other forms of life including advanced life coming and going sharing information with humanity? Or would you want them to believe they were isolated and apparently alone? Themes of human isolation and apartness are common whether they be the perception of a lifeless universe or the fascist isolation laws of the 'Covid' era. Paradoxically the very

existence of a simulation means that we are not alone when some force had to construct it. My view is that experiences that people have reported all over the world for centuries with Reptilians and Grey entities are Archon phenomena as Nag Hammadi texts describe; and that benevolent 'alien' interactions are non-human groups that come in and out of the simulation by overcoming Archon attempts to keep them out. It should be highlighted, too, that Reptilians and Greys are obsessed with *genetics* and *technology* as related by cultural accounts and those who say they have been abducted by them. Technology is their way of overcoming some of the limitations in their creative potential and our technology-driven and controlled human society of today is *arch*etypical Archon-Reptilian-Grey modus operandi. Technocracy is really *Archon*tocracy. The Universe does not have to be as big as it appears with a simulation. There is no space or distance only information decoded into holographic reality. What we call 'space' is only the absence of holographic 'objects' and that 'space' is The Field of energetic information which connects everything into a single whole. The same applies with the artificially-generated information field of the simulation. The Universe is not big or small as a physical reality. It is decoded information, that's all, and its perceived size is decided by the way the simulation is encoded to make it appear. The entire night sky as we perceive it only exists in our brain and so where are those 'millions of light years'? The 'stars' on the ceiling of the Planetarium looked a vast distance away.

There's another point to mention about 'aliens'. I have been highlighting since the 1990s the plan to stage a fake 'alien invasion' to justify the centralisation of global power and a world military. Nazi scientist Werner von Braun, who was taken to America by Operation Paperclip after World War Two to help found NASA, told his American assistant Dr Carol Rosin about the Cult agenda when he knew he was dying in 1977. Rosin said that he told her about a sequence that would lead to total human control by a one-world government. This included threats from terrorism, rogue nations, meteors and asteroids before finally an 'alien invasion'. All of these

things, von Braun said, would be bogus and what I would refer to as a No-Problem-Reaction-Solution. Keep this in mind when 'the aliens are coming' is the new mantra. The aliens are not coming – they are *already here* and they have infiltrated human society while looking human. French-Canadian investigative journalist Serge Monast said in 1994 that he had uncovered a NASA/military operation called Project Blue Beam which fits with what Werner von Braun predicted. Monast died of a 'heart attack' in 1996 the day after he was arrested and spent a night in prison. He was 51. He said Blue Beam was a plan to stage an alien invasion that would include religious figures beamed holographically into the sky as part of a global manipulation to usher in a 'new age' of worshipping what I would say is the Cult 'god' Yaldabaoth in a one-world religion. Fake holographic asteroids are also said to be part of the plan which again syncs with von Braun. How could you stage an illusory threat from asteroids unless they were holographic inserts? This is pretty straightforward given the advanced technology outside the public arena and the fact that our 'physical' reality is holographic anyway. Information fields would be projected and we would decode them into the illusion of a 'physical' asteroid. If they can sell a global 'pandemic' with a 'virus' that doesn't exist what will humans not believe if government and media tell them?

All this is particularly relevant as I write with the Pentagon planning to release in June, 2021, information about 'UFO sightings'. I have been following the UFO story since the early 1990s and the common theme throughout has been government and military denials and cover up. More recently, however, the Pentagon has suddenly become more talkative and apparently open with Air Force pilot radar images released of unexplained craft moving and changing direction at speeds well beyond anything believed possible with human technology. Then, in March, 2021, former Director of National Intelligence John Ratcliffe said a Pentagon report months later in June would reveal a great deal of information about UFO sightings unknown to the public. He said the report would have 'massive implications'. The order to do this was included bizarrely

in a $2.3 trillion 'coronavirus' relief and government funding bill passed by the Trump administration at the end of 2020. I would add some serious notes of caution here. I have been pointing out since the 1990s that the US military and intelligence networks have long had craft – 'flying saucers' or anti-gravity craft – which any observer would take to be extraterrestrial in origin. Keeping this knowledge from the public allows craft flown by *humans* to be perceived as alien visitations. I am not saying that 'aliens' do not exist. I would be the last one to say that, but we have to be streetwise here. President Ronald Reagan told the UN General Assembly in 1987: 'I occasionally think how quickly our differences worldwide would vanish if we were facing an alien threat from outside this world.' That's the idea. Unite against a common 'enemy' with a common purpose behind your 'saviour force' (the Cult) as this age-old technique of mass manipulation goes global.

Science moves this way …

I could find only one other person who was discussing the simulation hypothesis publicly when I concluded it was real. This was Nick Bostrom, a Swedish-born philosopher at the University of Oxford, who has explored for many years the possibility that human reality is a computer simulation although his version and mine are not the same. Today the simulation and holographic reality hypothesis have increasingly entered the scientific mainstream. Well, the more open-minded mainstream, that is. Here are a few of the ever-gathering examples. American nuclear physicist Silas Beane led a team of physicists at the University of Bonn in Germany pursuing the question of whether we live in a simulation. They concluded that we probably do and it was likely based on a lattice of cubes. They found that cosmic rays align with that specific pattern. The team highlighted the Greisen–Zatsepin–Kuzmin (GZK) limit which refers to cosmic ray particle interaction with cosmic background radiation that creates an apparent boundary for cosmic ray particles. They say in a paper entitled 'Constraints on the Universe as a Numerical Simulation' that this 'pattern of constraint' is exactly what you

would find with a computer simulation. They also made the point that a simulation would create its own 'laws of physics' that would limit possibility. I've been making the same point for decades that the *perceived* laws of physics relate only to this reality, or what I would later call the simulation. When designers write codes to create computer and virtual reality games they are the equivalent of the laws of physics for that game. Players interact within the limitations laid out by the coding. In the same way those who wrote the codes for the simulation decided the laws of physics that would apply. These can be overridden by expanded states of consciousness, but not by those enslaved in only five-sense awareness where simulation codes rule. Overriding the codes is what people call 'miracles'. They are not. They are bypassing the encoded limits of the simulation. A population caught in simulation perception would have no idea that this was their plight. As the Bonn paper said: 'Like a prisoner in a pitch-black cell we would not be able to see the "walls" of our prison,' That's true if people remain mesmerised by the five senses. Open to expanded awareness and those walls become very clear. The main one is the speed of light.

American theoretical physicist James Gates is another who has explored the simulation question and found considerable evidence to support the idea. Gates was Professor of Physics at the University of Maryland, Director of The Center for String and Particle Theory, and on Barack Obama's Council of Advisors on Science and Technology. He and his team found *computer codes* of digital data embedded in the fabric of our reality. They relate to on-off electrical charges of 1 and 0 in the binary system used by computers. 'We have no idea what they are doing there', Gates said. They found within the energetic fabric mathematical sequences known as error-correcting codes or block codes that 'reboot' data to its original state or 'default settings' when something knocks it out of sync. Gates was asked if he had found a set of equations embedded in our reality indistinguishable from those that drive search engines and browsers and he said: 'That is correct.' Rich Terrile, director of the Centre for Evolutionary Computation and Automated Design at NASA's Jet

Propulsion Laboratory, has said publicly that he believes the Universe is a digital hologram that must have been created by a form of intelligence. I agree with that in every way. Waveform information is delivered electrically by the senses to the brain which constructs a *digital* holographic reality that we call the 'world'. This digital level of reality can be read by the esoteric art of numerology. Digital holograms are at the cutting edge of holographics today. We have digital technology everywhere designed to access and manipulate our digital level of perceived reality. Synthetic mRNA in 'Covid vaccines' has a digital component to manipulate the body's digital 'operating system'.

Reality is numbers

How many know that our reality can be broken down to numbers and codes that are the same as computer games? Max Tegmark, a physicist at the Massachusetts Institute of Technology (MIT), is the author of *Our Mathematical Universe* in which he lays out how reality can be entirely described by numbers and maths in the way that a video game is encoded with the 'physics' of computer games. Our world and computer virtual reality are essentially the same. Tegmark imagines the perceptions of characters in an advanced computer game when the graphics are so good they don't know they are in a game. They think they can bump into real objects (electromagnetic resistance in our reality), fall in love and feel emotions like excitement. When they began to study the apparently 'physical world' of the video game they would realise that everything was made of pixels (which have been found in our energetic reality as must be the case when on one level our world is digital). What computer game characters thought was physical 'stuff', Tegmark said, could actually be broken down into numbers:

> And we're exactly in this situation in our world. We look around and it doesn't seem that mathematical at all, but everything we see is made out of elementary particles like quarks and electrons. And what properties does an electron have? Does it have a smell or a colour or a texture? No! ... We physicists have come up with geeky names for [Electron] properties, like

electric charge, or spin, or lepton number, but the electron doesn't care what we call it, the properties are just numbers.

This is the illusory reality Gnostics were describing. This is the simulation. The A, C, G, and T codes of DNA have a binary value – A and C = 0 while G and T = 1. This has to be when the simulation is digital and the body must be digital to interact with it. Recurring mathematical sequences are encoded throughout reality and the body. They include the Fibonacci sequence in which the two previous numbers are added to get the next one, as in ... 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, etc. The sequence is encoded in the human face and body, proportions of animals, DNA, seed heads, pine cones, trees, shells, spiral galaxies, hurricanes and the number of petals in a flower. The list goes on and on. There are fractal patterns – a 'never-ending pattern that is infinitely complex and self-similar across all scales in the as above, so below, principle of holograms. These and other famous recurring geometrical and mathematical sequences such as Phi, Pi, Golden Mean, Golden Ratio and Golden Section are *computer codes* of the simulation. I had to laugh and give my head a shake the day I finished this book and it went into the production stage. I was sent an article in *Scientific American* published in April, 2021, with the headline 'Confirmed! We Live in a Simulation'. Two decades after I first said our reality is a simulation and the speed of light is it's outer limit the article suggested that we do live in a simulation and that the speed of light is its outer limit. I left school at 15 and never passed a major exam in my life while the writer was up to his eyes in qualifications. As I will explain in the final chapter *knowing* is far better than thinking and they come from very different sources. The article rightly connected the speed of light to the processing speed of the 'Matrix' and said what has been in my books all this time … 'If we are in a simulation, as it appears, then space is an abstract property written in code. It is not real'. No it's not and if we live in a simulation something created it and it wasn't *us*. 'That David Icke says we are manipulated by aliens' – he's crackers.'

Wow …

The reality that humanity thinks is so real is an illusion. Politicians, governments, scientists, doctors, academics, law enforcement, media, school and university curriculums, on and on, are all founded on a world that *does not exist* except as a simulated prison cell. Is it such a stretch to accept that 'Covid' doesn't exist when our entire 'physical' reality doesn't exist? Revealed here is the knowledge kept under raps in the Cult networks of compartmentalised secrecy to control humanity's sense of reality by inducing the population to believe in a reality that's not real. If it wasn't so tragic in its experiential consequences the whole thing would be hysterically funny. None of this is new to Renegade Minds. Ancient Greek philosopher Plato (about 428 to about 347BC) was a major influence on Gnostic belief and he described the human plight thousands of years ago with his Allegory of the Cave. He told the symbolic story of prisoners living in a cave who had never been outside. They were chained and could only see one wall of the cave while behind them was a fire that they could not see. Figures walked past the fire casting shadows on the prisoners' wall and those moving shadows became their sense of reality. Some prisoners began to study the shadows and were considered experts on them (today's academics and scientists), but what they studied was only an illusion (today's academics and scientists). A prisoner escaped from the cave and saw reality as it really is. When he returned to report this revelation they didn't believe him, called him mad and threatened to kill him if he tried to set them free. Plato's tale is not only a brilliant analogy of the human plight and our illusory reality. It describes, too, the dynamics of the 'Covid' hoax. I have only skimmed the surface of these subjects here. The aim of this book is to crisply connect all essential dots to put what is happening today into its true context. All subject areas and their connections in this chapter are covered in great evidential detail in *Everything You Need To Know, But Have Never Been Told* and *The Answer*.

They say that bewildered people 'can't see the forest for the trees'. Humanity, however, can't see the forest for the *twigs*. The five senses

see only twigs while Renegade Minds can see the forest and it's the forest where the answers lie with the connections that reveals. Breaking free of perceptual programming so the forest can be seen is the way we turn all this around. Not breaking free is how humanity got into this mess. The situation may seem hopeless, but I promise you it's not. We are a perceptual heartbeat from paradise if only we knew.

CHAPTER TWELVE

Escaping Wetiko

Life is simply a vacation from the infinite
Dean Cavanagh

Renegade Minds weave the web of life and events and see common themes in the apparently random. They are always there if you look for them and their pursuit is aided by incredible synchronicity that comes when your mind is open rather than mesmerised by what it thinks it can see.

Infinite awareness is infinite possibility and the more of infinite possibility that we access the more becomes infinitely possible. That may be stating the apparently obvious, but it is a devastatingly-powerful fact that can set us free. We are a point of attention within an infinity of consciousness. The question is how much of that infinity do we choose to access? How much knowledge, insight, awareness, wisdom, do we want to connect with and explore? If your focus is only in the five senses you will be influenced by a fraction of infinite awareness. I mean a range so tiny that it gives new meaning to infinitesimal. Limitation of self-identity and a sense of the possible limit accordingly your range of consciousness. We are what we think we are. Life is what we think it is. The dream is the dreamer and the dreamer is the dream. Buddhist philosophy puts it this way: 'As a thing is viewed, so it appears.' Most humans live in the realm of touch, taste, see, hear, and smell and that's the limit of their sense of the possible and sense of self. Many will follow a religion and speak of a God in his heaven, but their lives are still

dominated by the five senses in their perceptions and actions. The five senses become the arbiter of everything. When that happens all except a smear of infinity is sealed away from influence by the rigid, unyielding, reality bubbles that are the five-sense human or Phantom Self. Archon Cult methodology is to isolate consciousness within five-sense reality – the simulation – and then program that consciousness with a sense of self and the world through a deluge of life-long information designed to instil the desired perception that allows global control. Efforts to do this have increased dramatically with identity politics as identity bubbles are squeezed into the minutiae of five-sense detail which disconnect people even more profoundly from the infinite 'I'.

Five-sense focus and self-identity are like a firewall that limits access to the infinite realms. You only perceive one radio or television station and no other. We'll take that literally for a moment. Imagine a vast array of stations giving different information and angles on reality, but you only ever listen to one. Here we have the human plight in which the population is overwhelmingly confined to CultFM. This relates only to the frequency range of CultFM and limits perception and insight to that band – limits *possibility* to that band. It means you are connecting with an almost imperceptibly minuscule range of possibility and creative potential within the infinite Field. It's a world where everything seems apart from everything else and where synchronicity is rare. Synchronicity is defined in the dictionary as 'the happening by chance of two or more related or similar events at the same time'. Use of 'by chance' betrays a complete misunderstanding of reality. Synchronicity is not 'by chance'. As people open their minds, or 'awaken' to use the term, they notice more and more coincidences in their lives, bits of 'luck', apparently miraculous happenings that put them in the right place at the right time with the right people. Days become peppered with 'fancy meeting you here' and 'what are the chances of that?' My entire life has been lived like this and ever more so since my own colossal awakening in 1990 and 91 which transformed my sense of reality. Synchronicity is not 'by chance'; it is by accessing expanded

realms of possibility which allow expanded potential for manifestation. People broadcasting the same vibe from the same openness of mind tend to be drawn 'by chance' to each other through what I call frequency magnetism and it's not only people. In the last more than 30 years incredible synchronicity has also led me through the Cult maze to information in so many forms and to crucial personal experiences. These 'coincidences' have allowed me to put the puzzle pieces together across an enormous array of subjects and situations. Those who have breached the bubble of five-sense reality will know exactly what I mean and this escape from the perceptual prison cell is open to everyone whenever they make that choice. This may appear super-human when compared with the limitations of 'human', but it's really our natural state. 'Human' as currently experienced is consciousness in an unnatural state of induced separation from the infinity of the whole. I'll come to how this transformation into unity can be made when I have described in more detail the force that holds humanity in servitude by denying this access to infinite self.

The Wetiko factor

I have been talking and writing for decades about the way five-sense mind is systematically barricaded from expanded awareness. I have used the analogy of a computer (five-sense mind) and someone at the keyboard (expanded awareness). Interaction between the computer and the operator is symbolic of the interaction between five-sense mind and expanded awareness. The computer directly experiences the Internet and the operator experiences the Internet via the computer which is how it's supposed to be – the two working as one. Archons seek to control that point where the operator connects with the computer to stop that interaction (Fig 20). Now the operator is banging the keyboard and clicking the mouse, but the computer is not responding and this happens when the computer is taken over – *possessed* – by an appropriately-named computer 'virus'. The operator has lost all influence over the computer which goes its own way making decisions under the control of the 'virus'. I have

just described the dynamic through which the force known to Gnostics as Yaldabaoth and Archons disconnects five-sense mind from expanded awareness to imprison humanity in perceptual servitude.

Figure 20: The mind 'virus' I have been writing about for decades seeks to isolate five-sense mind (the computer) from the true 'I'. (Image by Neil Hague).

About a year ago I came across a Native American concept of Wetiko which describes precisely the same phenomenon. Wetiko is the spelling used by the Cree and there are other versions including wintiko and windigo used by other tribal groups. They spell the name with lower case, but I see Wetiko as a proper noun as with Archons and prefer a capital. I first saw an article about Wetiko by writer and researcher Paul Levy which so synced with what I had been writing about the computer/operator disconnection and later the Archons. I then read his book, the fascinating *Dispelling Wetiko, Breaking the Spell of Evil*. The parallels between what I had concluded long before and the Native American concept of Wetiko were so clear and obvious that it was almost funny. For Wetiko see the Gnostic Archons for sure and the Jinn, the Predators, and every other name for a force of evil, inversion and chaos. Wetiko is the Native American name for the force that divides the computer from

the operator (Fig 21). Indigenous author Jack D. Forbes, a founder of the Native American movement in the 1960s, wrote another book about Wetiko entitled *Columbus And Other Cannibals – The Wetiko Disease of Exploitation, Imperialism, and Terrorism* which I also read. Forbes says that Wetiko refers to an evil person or spirit 'who terrorizes other creatures by means of terrible acts, including cannibalism'. Zulu shaman Credo Mutwa told me that African accounts tell how cannibalism was brought into the world by the Chitauri 'gods' – another manifestation of Wetiko. The distinction between 'evil person or spirit' relates to Archons/Wetiko possessing a human or acting as pure consciousness. Wetiko is said to be a sickness of the soul or spirit and a state of being that takes but gives nothing back – the Cult and its operatives perfectly described. Black Hawk, a Native American war leader defending their lands from confiscation, said European invaders had 'poisoned hearts' – Wetiko hearts – and that this would spread to native societies. Mention of the heart is very significant as we shall shortly see. Forbes writes: 'Tragically, the history of the world for the past 2,000 years is, in great part, the story of the epidemiology of the wetiko disease.' Yes, and much longer. Forbes is correct when he says: 'The wetikos destroyed Egypt and Babylon and Athens and Rome and Tenochtitlan [capital of the Aztec empire] and perhaps now they will destroy the entire earth.' Evil, he said, is the number one export of a Wetiko culture – see its globalisation with 'Covid'. Constant war, mass murder, suffering of all kinds, child abuse, Satanism, torture and human sacrifice are all expressions of Wetiko and the Wetiko possessed. The world is Wetiko made manifest, *but it doesn't have to be*. There is a way out of this even now.

Figure 21: The mind 'virus' is known to Native Americans as 'Wetiko'. (Image by Neil Hague).

Cult of Wetiko

Wetiko is the Yaldabaoth frequency distortion that seeks to attach to human consciousness and absorb it into its own. Once this connection is made Wetiko can drive the perceptions of the target which they believe to be coming from their own mind. All the horrors of history and today from mass killers to Satanists, paedophiles like Jeffrey Epstein and other psychopaths, are the embodiment of Wetiko and express its state of being in all its grotesqueness. The Cult is Wetiko incarnate, Yaldabaoth incarnate, and it seeks to facilitate Wetiko assimilation of humanity in totality into its distortion by manipulating the population into low frequency states that match its own. Paul Levy writes: 'Holographically enforced within the psyche of every human being the wetiko virus pervades and underlies the entire field of consciousness, and can therefore potentially manifest through any one of us at any moment if we are not mindful.' The 'Covid' hoax has achieved this with many people, but others have not fallen into Wetiko's frequency lair. Players in the 'Covid' human catastrophe including Gates, Schwab, Tedros, Fauci, Whitty, Vallance, Johnson, Hancock, Ferguson, Drosten, and all the rest, including the psychopath psychologists, are expressions of Wetiko. This is why

they have no compassion or empathy and no emotional consequence for what they do that would make them stop doing it. Observe all the people who support the psychopaths in authority against the Pushbackers despite the damaging impact the psychopaths have on their own lives and their family's lives. You are again looking at Wetiko possession which prevents them seeing through the lies to the obvious scam going on. *Why can't they see it?* Wetiko won't let them see it. The perceptual divide that has now become a chasm is between the Wetikoed and the non-Wetikoed.

Paul Levy describes Wetiko in the same way that I have long described the Archontic force. They are the same distorted consciousness operating across dimensions of reality: '… the subtle body of wetiko is not located in the third dimension of space and time, literally existing in another dimension … it is able to affect ordinary lives by mysteriously interpenetrating into our three-dimensional world.' Wetiko does this through its incarnate representatives in the Cult and by weaving itself into The Field which on our level of reality is the electromagnetic information field of the simulation or Matrix. More than that, the simulation *is* Wetiko / Yaldabaoth. Caleb Scharf, Director of Astrobiology at Columbia University, has speculated that 'alien life' could be so advanced that it has transcribed itself into the quantum realm to become what we call physics. He said intelligence indistinguishable from the fabric of the Universe would solve many of its greatest mysteries:

> Perhaps hyper-advanced life isn't just external. Perhaps it's already all around. It is embedded in what we perceive to be physics itself, from the root behaviour of particles and fields to the phenomena of complexity and emergence ... In other words, life might not just be in the equations. It might BE the equations [My emphasis].

Scharf said it is possible that 'we don't recognise advanced life because it forms an integral and unsuspicious part of what we've considered to be the natural world'. I agree. Wetiko/Yaldabaoth *is* the simulation. We are literally in the body of the beast. But that doesn't mean it has to control us. We all have the power to overcome Wetiko

influence and the Cult knows that. I doubt it sleeps too well because it knows that.

Which Field?

This, I suggest, is how it all works. There are two Fields. One is the fierce electromagnetic light of the Matrix within the speed of light; the other is the 'watery light' of The Field beyond the walls of the Matrix that connects with the Great Infinity. Five-sense mind and the decoding systems of the body attach us to the Field of Matrix light. They have to or we could not experience this reality. Five-sense mind sees only the Matrix Field of information while our expanded consciousness is part of the Infinity Field. When we open our minds, and most importantly our hearts, to the Infinity Field we have a mission control which gives us an expanded perspective, a road map, to understand the nature of the five-sense world. If we are isolated only in five-sense mind there is no mission control. We're on our own trying to understand a world that's constantly feeding us information to ensure we do not understand. People in this state can feel 'lost' and bewildered with no direction or radar. You can see ever more clearly those who are influenced by the Fields of Big Infinity or little five-sense mind simply by their views and behaviour with regard to the 'Covid' hoax. We have had this division throughout known human history with the mass of the people on one side and individuals who could see and intuit beyond the walls of the simulation – Plato's prisoner who broke out of the cave and saw reality for what it is. Such people have always been targeted by Wetiko/Archon-possessed authority, burned at the stake or demonised as mad, bad and dangerous. The Cult today and its global network of 'anti-hate', 'anti-fascist' Woke groups are all expressions of Wetiko attacking those exposing the conspiracy, 'Covid' lies and the 'vaccine' agenda.

Woke as a whole is Wetiko which explains its black and white mentality and how at one it is with the Wetiko-possessed Cult. Paul Levy said: 'To be in this paradigm is to still be under the thrall of a two-valued logic – where things are either true or false – of a

wetikoized mind.' Wetiko consciousness is in a permanent rage, therefore so is Woke, and then there is Woke inversion and contradiction. 'Anti-fascists' act like fascists because fascists *and* 'anti-fascists' are both Wetiko at work. Political parties act the same while claiming to be different for the same reason. Secret society and satanic rituals are attaching initiates to Wetiko and the cold, ruthless, psychopathic mentality that secures the positions of power all over the world is Wetiko. Reframing 'training programmes' have the same cumulative effect of attaching Wetiko and we have their graduates described as automatons and robots with a cold, psychopathic, uncaring demeanour. They are all traits of Wetiko possession and look how many times they have been described in this book and elsewhere with regard to personnel behind 'Covid' including the police and medical profession. Climbing the greasy pole in any profession in a Wetiko society requires traits of Wetiko to get there and that is particularly true of politics which is not about fair competition and pre-eminence of ideas. It is founded on how many backs you can stab and arses you can lick. This culminated in the global 'Covid' coordination between the Wetiko possessed who pulled it off in all the different countries without a trace of empathy and compassion for their impact on humans. Our sight sense can see only holographic form and not the Field which connects holographic form. Therefore we perceive 'physical' objects with 'space' in between. In fact that 'space' is energy/consciousness operating on multiple frequencies. One of them is Wetiko and that connects the Cult psychopaths, those who submit to the psychopaths, and those who serve the psychopaths in the media operations of the world. Wetiko is Gates. Wetiko is the mask-wearing submissive. Wetiko is the fake journalist and 'fact-checker'. The Wetiko Field is coordinating the whole thing. Psychopaths, gofers, media operatives, 'anti-hate' hate groups, 'fact-checkers' and submissive people work as one unit *even without human coordination* because they are attached to the *same* Field which is organising it all (Fig 22). Paul Levy is here describing how Wetiko-possessed people are drawn together and refuse to let any information breach their rigid

perceptions. He was writing long before 'Covid', but I think you will recognise followers of the 'Covid' religion *oh just a little bit*:

People who are channelling the vibratory frequency of wetiko align with each other through psychic resonance to reinforce their unspoken shared agreement so as to uphold their deranged view of reality. Once an unconscious content takes possession of certain individuals, it irresistibly draws them together by mutual attraction and knits them into groups tied together by their shared madness that can easily swell into an avalanche of insanity.

A psychic epidemic is a closed system, which is to say that it is insular and not open to any new information or informing influences from the outside world which contradict its fixed, limited, and limiting perspective.

There we have the Woke mind and the 'Covid' mind. Compatible resonance draws the awakening together, too, which is clearly happening today.

Figure 22: The Wetiko Field from which the Cult pyramid and its personnel are made manifest. (Image by Neil Hague).

Spiritual servitude

Wetiko doesn't care about humans. It's not human; it just possesses humans for its own ends and the effect (depending on the scale of

possession) can be anything from extreme psychopathy to unquestioning obedience. Wetiko's worst nightmare is for human consciousness to expand beyond the simulation. Everything is focussed on stopping that happening through control of information, thus perception, thus frequency. The 'education system', media, science, medicine, academia, are all geared to maintaining humanity in five-sense servitude as is the constant stimulation of low-vibrational mental and emotional states (see 'Covid'). Wetiko seeks to dominate those subconscious spaces between five-sense perception and expanded consciousness where the computer meets the operator. From these subconscious hiding places Wetiko speaks to us to trigger urges and desires that we take to be our own and manipulate us into anything from low-vibrational to psychopathic states. Remember how Islam describes the Jinn as invisible tricksters that 'whisper' and confuse. Wetiko is the origin of the 'trickster god' theme that you find in cultures all over the world. Jinn, like the Archons, are Wetiko which is terrified of humans awakening and reconnecting with our true self for then its energy source has gone. With that the feedback loop breaks between Wetiko and human perception that provides the energetic momentum on which its very existence depends as a force of evil. Humans are both its target and its source of survival, but only if we are operating in low-vibrational states of fear, hate, depression and the background anxiety that most people suffer. We are Wetiko's target because we are its key to survival. It needs us, not the other way round. Paul Levy writes:

A vampire has no intrinsic, independent, substantial existence in its own right; it only exists in relation to us. The pathogenic, vampiric mind-parasite called wetiko is nothing in itself – not being able to exist from its own side – yet it has a 'virtual reality' such that it can potentially destroy our species …

…The fact that a vampire is not reflected by a mirror can also mean that what we need to see is that there's nothing, no-thing to see, other than ourselves. The fact that wetiko is the expression of something inside of us means that the cure for wetiko is with us as well. The critical issue is finding this cure within us and then putting it into effect.

Evil begets evil because if evil does not constantly expand and find new sources of energetic sustenance its evil, its *distortion*, dies with the assimilation into balance and harmony. Love is the garlic to Wetiko's vampire. Evil, the absence of love, cannot exist in the presence of love. I think I see a way out of here. I have emphasised so many times over the decades that the Archons/Wetiko and their Cult are not all powerful. *They are not*. I don't care how it looks even now *they are not*. I have not called them little boys in short trousers for effect. I have said it because it is true. Wetiko's insatiable desire for power over others is not a sign of its omnipotence, but its insecurity. Paul Levy writes: 'Due to the primal fear which ultimately drives it and which it is driven to cultivate, wetiko's body politic has an intrinsic and insistent need for centralising power and control so as to create imagined safety for itself.' *Yeeeeeees!* Exactly! Why does Wetiko want humans in an ongoing state of fear? Wetiko itself *is* fear and it is petrified of love. As evil is an absence of love, so love is an absence of fear. Love conquers all and *especially* Wetiko which *is* fear. Wetiko brought fear into the world when it wasn't here before. *Fear* was the 'fall', the fall into low-frequency ignorance and illusion – fear is **F**alse **E**motion **A**ppearing **R**eal. The simulation is driven and energised by fear because Wetiko/Yaldabaoth (fear) *are* the simulation. Fear is the absence of love and Wetiko is the absence of love.

Wetiko today

We can now view current events from this level of perspective. The 'Covid' hoax has generated momentous amounts of ongoing fear, anxiety, depression and despair which have empowered Wetiko. No wonder people like Gates have been the instigators when they are Wetiko incarnate and exhibit every trait of Wetiko in the extreme. See how cold and unemotional these people are like Gates and his cronies, how dead of eye they are. That's Wetiko. Sabbatians are Wetiko and everything they control including the World Health Organization, Big Pharma and the 'vaccine' makers, national 'health'

hierarchies, corporate media, Silicon Valley, the banking system, and the United Nations with its planned transformation into world government. All are controlled and possessed by the Wetiko distortion into distorting human society in its image. We are with this knowledge at the gateway to understanding the world. Divisions of race, culture, creed and sexuality are diversions to hide the real division between those possessed and influenced by Wetiko and those that are not. The 'Covid' hoax has brought both clearly into view. Human behaviour is not about race. Tyrants and dictatorships come in all colours and creeds. What unites the US president bombing the innocent and an African tribe committing genocide against another as in Rwanda? What unites them? *Wetiko*. All wars are Wetiko, all genocide is Wetiko, all hunger over centuries in a world of plenty is Wetiko. Children going to bed hungry, including in the West, is Wetiko. Cult-generated Woke racial divisions that focus on the body are designed to obscure the reality that divisions in behaviour are manifestations of mind, not body. Obsession with body identity and group judgement is a means to divert attention from the real source of behaviour – mind and perception. Conflict sown by the Woke both within themselves and with their target groups are Wetiko providing lunch for itself through still more agents of the division, chaos, and fear on which it feeds. The Cult is seeking to assimilate the entirety of humanity and all children and young people into the Wetiko frequency by manipulating them into states of fear and despair. Witness all the suicide and psychological unravelling since the spring of 2020. Wetiko psychopaths want to impose a state of unquestioning obedience to authority which is no more than a conduit for Wetiko to enforce its will and assimilate humanity into itself. It needs us to believe that resistance is futile when it fears resistance and even more so the game-changing non-cooperation with its impositions. It can use violent resistance for its benefit. Violent impositions and violent resistance are *both* Wetiko. The Power of Love with its Power of No will sweep Wetiko from our world. Wetiko and its Cult know that. They just don't want us to know.

AI Wetiko

This brings me to AI or artificial intelligence and something else Wetikos don't want us to know. What is AI *really*? I know about computer code algorithms and AI that learns from data input. These, however, are more diversions, the expeditionary force, for the real AI that they want to connect to the human brain as promoted by Silicon Valley Wetikos like Kurzweil. What is this AI? It is the frequency of *Wetiko*, the frequency of the Archons. The connection of AI to the human brain is the connection of the Wetiko frequency to create a Wetiko hive mind and complete the job of assimilation. The hive mind is planned to be controlled from Israel and China which are both 100 percent owned by Wetiko Sabbatians. The assimilation process has been going on minute by minute in the 'smart' era which fused with the 'Covid' era. We are told that social media is scrambling the minds of the young and changing their personality. This is true, but what is social media? Look more deeply at how it works, how it creates divisions and conflict, the hostility and cruelty, the targeting of people until they are destroyed. That's Wetiko. Social media is manipulated to tune people to the Wetiko frequency with all the emotional exploitation tricks employed by platforms like Facebook and its Wetiko front man, Zuckerberg. Facebook's Instagram announced a new platform for children to overcome a legal bar on them using the main site. This is more Wetiko exploitation and manipulation of kids. Amnesty International likened the plan to foxes offering to guard the henhouse and said it was incompatible with human rights. Since when did Wetiko or Zuckerberg (I repeat myself) care about that? Would Brin and Page at Google, Wojcicki at YouTube, Bezos at Amazon and whoever the hell runs Twitter act as they do if they were not channelling Wetiko? Would those who are developing technologies for no other reason than human control? How about those designing and selling technologies to kill people and Big Pharma drug and 'vaccine' producers who know they will end or devastate lives? Quite a thought for these people to consider is that if you are Wetiko in a human life you are Wetiko on the 'other side' unless your frequency

changes and that can only change by a change of perception which becomes a change of behaviour. Where Gates is going does not bear thinking about although perhaps that's exactly where he wants to go. Either way, that's where he's going. His frequency will make it so.

The frequency lair

I have been saying for a long time that a big part of the addiction to smartphones and devices is that a frequency is coming off them that entraps the mind. People spend ages on their phones and sometimes even a minute or so after they put them down they pick them up again and it all repeats. 'Covid' lockdowns will have increased this addiction a million times for obvious reasons. Addictions to alcohol overindulgence and drugs are another way that Wetiko entraps consciousness to attach to its own. Both are symptoms of low-vibrational psychological distress which alcoholism and drug addiction further compound. Do we think it's really a coincidence that access to them is made so easy while potions that can take people into realms beyond the simulation are banned and illegal? I have explored smartphone addiction in other books, the scale is mind-blowing, and that level of addiction does not come without help. Tech companies that make these phones are Wetiko and they will have no qualms about destroying the minds of children. We are seeing again with these companies the Wetiko perceptual combination of psychopathic enforcers and weak and meek unquestioning compliance by the rank and file.

The global Smart Grid is the Wetiko Grid and it is crucial to complete the Cult endgame. The simulation is radiation and we are being deluged with technological radiation on a devastating scale. Wetiko frauds like Elon Musk serve Cult interests while occasionally criticising them to maintain his street-cred. 5G and other forms of Wi-Fi are being directed at the earth from space on a volume and scale that goes on increasing by the day. Elon Musk's (officially) SpaceX Starlink project is in the process of putting tens of thousands of satellites in low orbit to cover every inch of the planet with 5G and other Wi-Fi to create Kurzweil's global 'cloud' to which the

human mind is planned to be attached very soon. SpaceX has approval to operate 12,000 satellites with more than 1,300 launched at the time of writing and applications filed for *30,000* more. Other operators in the Wi-Fi, 5G, low-orbit satellite market include OneWeb (UK), Telesat (Canada), and AST & Science (US). Musk tells us that AI could be the end of humanity and then launches a company called Neuralink to connect the human brain to computers. Musk's (in theory) Tesla company is building electric cars and the driverless vehicles of the smart control grid. As frauds and bullshitters go Elon Musk in my opinion is Major League.

5G and technological radiation in general are destructive to human health, genetics and psychology and increasing the strength of artificial radiation underpins the five-sense perceptual bubbles which are themselves expressions of radiation or electromagnetism. Freedom activist John Whitehead was so right with his 'databit by databit, we are building our own electronic concentration camps'. The Smart Grid and 5G is a means to control the human mind and infuse perceptual information into The Field to influence anyone in sync with its frequency. You can change perception and behaviour en masse if you can manipulate the population into those levels of frequency and this is happening all around us today. The arrogance of Musk and his fellow Cult operatives knows no bounds in the way that we see with Gates. Musk's satellites are so many in number already they are changing the night sky when viewed from Earth. The astronomy community has complained about this and they have seen nothing yet. Some consequences of Musk's Wetiko hubris include: Radiation; visible pollution of the night sky; interference with astronomy and meteorology; ground and water pollution from intensive use of increasingly many spaceports; accumulating space debris; continual deorbiting and burning up of aging satellites, polluting the atmosphere with toxic dust and smoke; and ever-increasing likelihood of collisions. A collective public open letter of complaint to Musk said:

> We are writing to you … because SpaceX is in process of surrounding the Earth with a network of thousands of satellites whose very purpose is to irradiate every square inch of the

Earth. SpaceX, like everyone else, is treating the radiation as if it were not there. As if the mitochondria in our cells do not depend on electrons moving undisturbed from the food we digest to the oxygen we breathe.

As if our nervous systems and our hearts are not subject to radio frequency interference like any piece of electronic equipment. As if the cancer, diabetes, and heart disease that now afflict a majority of the Earth's population are not metabolic diseases that result from interference with our cellular machinery. As if insects everywhere, and the birds and animals that eat them, are not starving to death as a result.

People like Musk and Gates believe in their limitless Wetiko arrogance that they can do whatever they like to the world because they own it. Consequences for humanity are irrelevant. It's absolutely time that we stopped taking this shit from these self-styled masters of the Earth when you consider where this is going.

Why is the Cult so anti-human?

I hear this question often: Why would they do this when it will affect them, too? Ah, but will it? Who is this *them*? Forget their bodies. They are just vehicles for Wetiko consciousness. When you break it all down to the foundations we are looking at a state of severely distorted consciousness targeting another state of consciousness for assimilation. The rest is detail. The simulation is the fly-trap in which unique sensations of the five senses create a cycle of addiction called reincarnation. Renegade Minds see that everything which happens in our reality is a smaller version of the whole picture in line with the holographic principle. Addiction to the radiation of smart technology is a smaller version of addiction to the whole simulation. Connecting the body/brain to AI is taking that addiction on a giant step further to total ongoing control by assimilating human incarnate consciousness into Wetiko. I have watched during the 'Covid' hoax how many are becoming ever more profoundly attached to Wetiko's perceptual calling cards of aggressive response to any other point of view ('There is no other god but me'), psychopathic lack of compassion and empathy, and servile submission to the narrative and will of authority. Wetiko is the psychopaths *and* subservience to psychopaths. The Cult of Wetiko is

so anti-human because it is *not* human. It embarked on a mission to destroy human by targeting everything that it means to be human and to survive as human. 'Covid' is not the end, just a means to an end. The Cult with its Wetiko consciousness is seeking to change Earth systems, including the atmosphere, to suit them, not humans. The gathering bombardment of 5G alone from ground and space is dramatically changing The Field with which the five senses interact. There is so much more to come if we sit on our hands and hope it will all go away. It is not meant to go away. It is meant to get ever more extreme and we need to face that while we still can – just.

Carbon dioxide is the gas of life. Without that human is over. Kaput, gone, history. No natural world, no human. The Cult has created a cock and bull story about carbon dioxide and climate change to justify its reduction to the point where Gates and the ignoramus Biden 'climate chief' John Kerry want to suck it out of the atmosphere. Kerry wants to do this because his master Gates does. Wetikos have made the gas of life a demon with the usual support from the Wokers of Extinction Rebellion and similar organisations and the bewildered puppet-child that is Greta Thunberg who was put on the world stage by Klaus Schwab and the World Economic Forum. The name Extinction Rebellion is both ironic and as always Wetiko inversion. The gas that we need to survive must be reduced to save us from extinction. The most basic need of human is oxygen and we now have billions walking around in face nappies depriving body and brain of this essential requirement of human existence. More than that 5G at 60 gigahertz interacts with the oxygen molecule to reduce the amount of oxygen the body can absorb into the bloodstream. The obvious knock-on consequences of that for respiratory and cognitive problems and life itself need no further explanation. Psychopaths like Musk are assembling a global system of satellites to deluge the human atmosphere with this insanity. The man should be in jail. Here we have two most basic of human needs, oxygen and carbon dioxide, being dismantled.

Two others, water and food, are getting similar treatment with the United Nations Agendas 21 and 2030 – the Great Reset – planning to

centrally control all water and food supplies. People will not even own rain water that falls on their land. Food is affected at the most basic level by reducing carbon dioxide. We have genetic modification or GMO infiltrating the food chain on a mass scale, pesticides and herbicides polluting the air and destroying the soil. Freshwater fish that provide livelihoods for 60 million people and feed hundreds of millions worldwide are being 'pushed to the brink' according the conservationists while climate change is the only focus. Now we have Gates and Schwab wanting to dispense with current food sources all together and replace them with a synthetic version which the Wetiko Cult would control in terms of production and who eats and who doesn't. We have been on the Totalitarian Tiptoe to this for more than 60 years as food has become ever more processed and full of chemical shite to the point today when it's not natural food at all. As Dr Tom Cowan says: 'If it has a label don't eat it.' Bill Gates is now the biggest owner of farmland in the United States and he does nothing without an ulterior motive involving the Cult. Klaus Schwab wrote: 'To feed the world in the next 50 years we will need to produce as much food as was produced in the last 10,000 years … food security will only be achieved, however, if regulations on genetically modified foods are adapted to reflect the reality that gene editing offers a precise, efficient and safe method of improving crops.' Liar. People and the world are being targeted with aluminium through vaccines, chemtrails, food, drink cans, and endless other sources when aluminium has been linked to many health issues including dementia which is increasing year after year. Insects, bees and wildlife essential to the food chain are being deleted by pesticides, herbicides and radiation which 5G is dramatically increasing with 6G and 7G to come. The pollinating bee population is being devastated while wildlife including birds, dolphins and whales are having their natural radar blocked by the effects of ever-increasing radiation. In the summer windscreens used to be splattered with insects so numerous were they. It doesn't happen now. Where have they gone?

Synthetic everything

The Cult is introducing genetically-modified versions of trees, plants and insects including a Gates-funded project to unleash hundreds of millions of genetically-modified, lab-altered and patented male mosquitoes to mate with wild mosquitoes and induce genetic flaws that cause them to die out. Clinically-insane Gates-funded Japanese researchers have developed mosquitos that spread vaccine and are dubbed 'flying vaccinators'. Gates is funding the modification of weather patterns in part to sell the myth that this is caused by carbon dioxide and he's funding geoengineering of the skies to change the atmosphere. Some of this came to light with the Gates-backed plan to release tonnes of chalk into the atmosphere to 'deflect the Sun and cool the planet'. Funny how they do this while the heating effect of the Sun is not factored into climate projections focussed on carbon dioxide. The reason is that they want to reduce carbon dioxide (so don't mention the Sun), but at the same time they do want to reduce the impact of the Sun which is so essential to human life and health. I have mentioned the sun-cholesterol-vitamin D connection as they demonise the Sun with warnings about skin cancer (caused by the chemicals in sun cream they tell you to splash on). They come from the other end of the process with statin drugs to reduce cholesterol that turns sunlight into vitamin D. A lack of vitamin D leads to a long list of health effects and how vitamin D levels must have fallen with people confined to their homes over 'Covid'. Gates is funding other forms of geoengineering and most importantly chemtrails which are dropping heavy metals, aluminium and self-replicating nanotechnology onto the Earth which is killing the natural world. See *Everything You Need To Know, But Have Never Been Told* for the detailed background to this.

Every human system is being targeted for deletion by a force that's not human. The Wetiko Cult has embarked on the process of transforming the human body from biological to synthetic biological as I have explained. Biological is being replaced by the artificial and synthetic – Archontic 'countermimicry' – right across human society. The plan eventually is to dispense with the human body altogether

and absorb human consciousness – which it wouldn't really be by then – into cyberspace (the simulation which is Wetiko/Yaldabaoth). Preparations for that are already happening if people would care to look. The alternative media rightly warns about globalism and 'the globalists', but this is far bigger than that and represents the end of the human race as we know it. The 'bad copy' of prime reality that Gnostics describe was a bad copy of harmony, wonder and beauty to start with before Wetiko/Yaldabaoth set out to change the simulated 'copy' into something very different. The process was slow to start with. Entrapped humans in the simulation timeline were not technologically aware and they had to be brought up to intellectual speed while being suppressed spiritually to the point where they could build their own prison while having no idea they were doing so. We have now reached that stage where technological intellect has the potential to destroy us and that's why events are moving so fast. Central American shaman Don Juan Matus said:

> Think for a moment, and tell me how you would explain the contradictions between the intelligence of man the engineer and the stupidity of his systems of belief, or the stupidity of his contradictory behaviour. Sorcerers believe that the predators have given us our systems of beliefs, our ideas of good and evil; our social mores. They are the ones who set up our dreams of success or failure. They have given us covetousness, greed, and cowardice. It is the predator who makes us complacent, routinary, and egomaniacal.
>
> In order to keep us obedient and meek and weak, the predators engaged themselves in a stupendous manoeuvre – stupendous, of course, from the point of view of a fighting strategist; a horrendous manoeuvre from the point of those who suffer it. They gave us their mind. The predators' mind is baroque, contradictory, morose, filled with the fear of being discovered any minute now.

For 'predators' see Wetiko, Archons, Yaldabaoth, Jinn, and all the other versions of the same phenomenon in cultures and religions all over the world. The theme is always the same because it's true and it's real. We have reached the point where we have to deal with it. The question is – how?

Don't fight – walk away

I thought I'd use a controversial subheading to get things moving in terms of our response to global fascism. What do you mean 'don't fight'? What do you mean 'walk away'? We've got to fight. We can't walk away. Well, it depends what we mean by fight and walk away. If fighting means physical combat we are playing Wetiko's game and falling for its trap. It wants us to get angry, aggressive, and direct hate and hostility at the enemy we think we must fight. Every war, every battle, every conflict, has been fought with Wetiko leading both sides. It's what it does. Wetiko wants a fight, anywhere, any place. Just hit me, son, so I can hit you back. Wetiko hits Wetiko and Wetiko hits Wetiko in return. I am very forthright as you can see in exposing Wetikos of the Cult, but I don't hate them. I refuse to hate them. It's what they want. What you hate you become. What you *fight* you become. Wokers, 'anti-haters' and 'anti-fascists' prove this every time they reach for their keyboards or don their balaclavas. By walk away I mean to disengage from Wetiko which includes ceasing to cooperate with its tyranny. Paul Levy says of Wetiko:

> The way to 'defeat' evil is not to try to destroy it (for then, in playing evil's game, we have already lost), but rather, to find the invulnerable place within ourselves where evil is unable to vanquish us – this is to truly 'win' our battle with evil.

Wetiko is everywhere in human society and it's been on steroids since the 'Covid' hoax. Every shouting match over wearing masks has Wetiko wearing a mask and Wetiko not wearing one. It's an electrical circuit of push and resist, push and resist, with Wetiko pushing *and* resisting. Each polarity is Wetiko empowering itself. Dictionary definitions of 'resist' include 'opposing, refusing to accept or comply with' and the word to focus on is 'opposing'. What form does this take – setting police cars alight or 'refusing to accept or comply with'? The former is Wetiko opposing Wetiko while the other points the way forward. This is the difference between those aggressively demanding that government fascism must be obeyed who stand in stark contrast to the great majority of Pushbackers. We saw this clearly with a march by thousands of Pushbackers against lockdown in London followed days later by a Woker-hijacked

protest in Bristol in which police cars were set on fire. Masks were virtually absent in London and widespread in Bristol. Wetiko wants lockdown on every level of society and infuses its aggression to police it through its unknowing stooges. Lockdown protesters are the ones with the smiling faces and the hugs, The two blatantly obvious states of being – getting more obvious by the day – are the result of Wokers and their like becoming ever more influenced by the simulation Field of Wetiko and Pushbackers ever more influenced by The Field of a far higher vibration beyond the simulation. Wetiko can't invade the heart which is where most lockdown opponents are coming from. It's the heart that allows them to see through the lies to the truth in ways I will be highlighting.

Renegade Minds know that calmness is the place from which wisdom comes. You won't find wisdom in a hissing fit and wisdom is what we need in abundance right now. Calmness is not weakness – you don't have to scream at the top of your voice to be strong. Calmness is indeed a sign of strength. 'No' means I'm not doing it. *NOOOO!!!* doesn't mean you're not doing it even more. Volume does not advance 'No – I'm not doing it'. You are just not doing it. Wetiko possessed and influenced don't know how to deal with that. Wetiko wants a fight and we should not give it one. What it needs more than anything is our *cooperation* and we should not give that either. Mass rallies and marches are great in that they are a visual representation of feeling, but if it ends there they are irrelevant. You demand that Wetikos act differently? Well, they're not going to are they? They are Wetikos. We don't need to waste our time demanding that something doesn't happen when that will make no difference. We need to delete the means that *allows* it to happen. This, invariably, is our cooperation. You can demand a child stop firing a peashooter at the dog or you can refuse to buy the peashooter. If you provide the means you are cooperating with the dog being smacked on the nose with a pea. How can the authorities enforce mask-wearing if millions in a country refuse? What if the 74 million Pushbackers that voted for Trump in 2020 refused to wear masks, close their businesses or stay in their homes. It would be unenforceable. The

few control the many through the compliance of the many and that's always been the dynamic be it 'Covid' regulations or the Roman Empire. I know people can find it intimidating to say no to authority or stand out in a crowd for being the only one with a face on display; but it has to be done or it's over. I hope I've made clear in this book that where this is going will be far more intimidating than standing up now and saying 'No' – I will not cooperate with my own enslavement and that of my children. There might be consequences for some initially, although not so if enough do the same. The question that must be addressed is what is going to happen if we don't? It is time to be strong and unyieldingly so. No means no. Not here and there, but *everywhere* and *always*. I have refused to wear a mask and obey all the other nonsense. I will not comply with tyranny. I repeat: Fascism is not imposed by fascists – there are never enough of them. Fascism is imposed by the population acquiescing to fascism. *I will not do it*. I will die first, or my body will. Living meekly under fascism is a form of death anyway, the death of the spirit that Martin Luther King described.

Making things happen

We must not despair. This is not over till it's over and it's far from that. The 'fat lady' must refuse to sing. The longer the 'Covid' hoax has dragged on and impacted on more lives we have seen an awakening of phenomenal numbers of people worldwide to the realisation that what they have believed all their lives is not how the world really is. Research published by the system-serving University of Bristol and King's College London in February, 2021, concluded: 'One in every 11 people in Britain say they trust David Icke's take on the coronavirus pandemic.' It will be more by now and we have gathering numbers to build on. We must urgently progress from seeing the scam to ceasing to cooperate with it. Prominent German lawyer Reiner Fuellmich, also licenced to practice law in America, is doing a magnificent job taking the legal route to bring the psychopaths to justice through a second Nuremberg tribunal for crimes against humanity. Fuellmich has an impressive record of

beating the elite in court and he formed the German Corona Investigative Committee to pursue civil charges against the main perpetrators with a view to triggering criminal charges. Most importantly he has grasped the foundation of the hoax – the PCR test not testing for the 'virus' – and Christian Drosten is therefore on his charge sheet along with Gates frontman Tedros at the World Health Organization. Major players must be not be allowed to inflict their horrors on the human race without being brought to book. A life sentence must follow for Bill Gates and the rest of them. A group of researchers has also indicted the government of Norway for crimes against humanity with copies sent to the police and the International Criminal Court. The lawsuit cites participation in an internationally-planned false pandemic and violation of international law and human rights, the European Commission's definition of human rights by coercive rules, Nuremberg and Hague rules on fundamental human rights, and the Norwegian constitution. We must take the initiative from hereon and not just complain, protest and react.

There are practical ways to support vital mass non-cooperation. Organising in numbers is one. Lockdown marches in London in the spring in 2021 were mass non-cooperation that the authorities could not stop. There were too many people. Hundreds of thousands walked the London streets in the centre of the road for mile after mile while the Face-Nappies could only look on. They were determined, but calm, and just *did it* with no histrionics and lots of smiles. The police were impotent. Others are organising group shopping without masks for mutual support and imagine if that was happening all over. Policing it would be impossible. If the store refuses to serve people in these circumstances they would be faced with a long line of trolleys full of goods standing on their own and everything would have to be returned to the shelves. How would they cope with that if it kept happening? I am talking here about moving on from complaining to being pro-active; from watching things happen to making things happen. I include in this our relationship with the police. The behaviour of many Face-Nappies

has been disgraceful and anyone who thinks they would never find concentration camp guards in the 'enlightened' modern era have had that myth busted big-time. The period and setting may change – Wetikos never do. I watched film footage from a London march in which a police thug viciously kicked a protestor on the floor who had done nothing. His fellow Face-Nappies stood in a ring protecting him. What he did was a criminal assault and with a crowd far outnumbering the police this can no longer be allowed to happen unchallenged. I get it when people chant 'shame on you' in these circumstances, but that is no longer enough. They *have* no shame those who do this. Crowds needs to start making a citizen's arrest of the police who commit criminal offences and brutally attack innocent people and defenceless women. A citizen's arrest can be made under section 24A of the UK Police and Criminal Evidence (PACE) Act of 1984 and you will find something similar in other countries. I prefer to call it a Common Law arrest rather than citizen's for reasons I will come to shortly. Anyone can arrest a person committing an indictable offence or if they have reasonable grounds to suspect they are committing an indictable offence. On both counts the attack by the police thug would have fallen into this category. A citizen's arrest can be made to stop someone:

- Causing physical injury to himself or any other person
- Suffering physical injury
- Causing loss of or damage to property
- Making off before a constable can assume responsibility for him

A citizen's arrest may also be made to prevent a breach of the peace under Common Law and if they believe a breach of the peace will happen or anything related to harm likely to be done or already done in their presence. This is the way to go I think – the Common Law version. If police know that the crowd and members of the public will no longer be standing and watching while they commit

their thuggery and crimes they will think twice about acting like Brownshirts and Blackshirts.

Common Law – common sense

Mention of Common Law is very important. Most people think the law is the law as in one law. This is not the case. There are two bodies of law, Common Law and Statute Law, and they are not the same. Common Law is founded on the simple premise of do no harm. It does not recognise victimless crimes in which no harm is done while Statute Law does. There is a Statute Law against almost everything. So what is Statute Law? Amazingly it's the law of the *sea* that was brought ashore by the Cult to override the law of the land which is Common Law. They had no right to do this and as always they did it anyway. They had to. They could not impose their will on the people through Common Law which only applies to do no harm. How could you stitch up the fine detail of people's lives with that? Instead they took the law of the sea, or Admiralty Law, and applied it to the population. Statute Law refers to all the laws spewing out of governments and their agencies including all the fascist laws and regulations relating to 'Covid'. The key point to make is that Statute Law is *contract law*. It only applies between *contracting* corporations. Most police officers don't even know this. They have to be kept in the dark, too. Long ago when merchants and their sailing ships began to trade with different countries a contractual law was developed called Admiralty Law and other names. Again it only applied to *contracts* agreed between *corporate* entities. If there is no agreed contract the law of the sea had no jurisdiction *and that still applies to its new alias of Statute Law*. The problem for the Cult when the law of the sea was brought ashore was an obvious one. People were not corporations and neither were government entities. To overcome the latter they made governments and all associated organisations corporations. All the institutions are *private corporations* and I mean governments and their agencies, local councils, police, courts, military, US states, the whole lot. Go to the

Dun and Bradstreet corporate listings website for confirmation that they are all corporations. You are arrested by a private corporation called the police by someone who is really a private security guard and they take you to court which is another private corporation. Neither have jurisdiction over you unless you consent and *contract* with them. This is why you hear the mantra about law enforcement policing by *consent* of the people. In truth the people 'consent' only in theory through monumental trickery.

Okay, the Cult overcame the corporate law problem by making governments and institutions corporate entities; but what about people? They are not corporations are they? Ah ... well in a sense, and *only* a sense, they are. Not people exactly – the illusion of people. The Cult creates a corporation in the name of everyone at the time that their birth certificate is issued. Note birth/ *berth* certificate and when you go to court under the law of the sea on land you stand in a *dock*. These are throwbacks to the origin. My Common Law name is David Vaughan Icke. The name of the corporation created by the government when I was born is called Mr David Vaughan Icke usually written in capitals as MR DAVID VAUGHAN ICKE. That is not me, the living, breathing man. It is a fictitious corporate entity. The trick is to make you think that David Vaughan Icke and MR DAVID VAUGHAN ICKE are the same thing. *They are not*. When police charge you and take you to court they are prosecuting the corporate entity and not the living, breathing, man or woman. They have to trick you into identifying as the corporate entity and contracting with them. Otherwise they have no jurisdiction. They do this through a language known as legalese. Lawful and legal are not the same either. Lawful relates to Common Law and legal relates to Statute Law. Legalese is the language of Statue Law which uses terms that mean one thing to the public and another in legalese. Notice that when a police officer tells someone why they are being charged he or she will say at the end: 'Do you understand?' To the public that means 'Do you comprehend?' In legalese it means 'Do you stand under me?' Do you stand under my authority? If you say

yes to the question you are unknowingly agreeing to give them jurisdiction over you in a contract between two corporate entities.

This is a confidence trick in every way. Contracts have to be agreed between informed parties and if you don't know that David Vaughan Icke is agreeing to be the corporation MR DAVID VAUGHAN ICKE you cannot knowingly agree to contract. They are deceiving you and another way they do this is to ask for proof of identity. You usually show them a driving licence or other document on which your corporate name is written. In doing so you are accepting that you are that corporate entity when you are not. Referring to yourself as a 'person' or 'citizen' is also identifying with your corporate fiction which is why I made the Common Law point about the citizen's arrest. If you are approached by a police officer you identify yourself immediately as a living, breathing, man or woman and say 'I do not consent, I do not contract with you and I do not understand' or stand under their authority. I have a Common Law birth certificate as a living man and these are available at no charge from commonlawcourt.com. Businesses registered under the Statute Law system means that its laws apply. There are, however, ways to run a business under Common Law. Remember all 'Covid' laws and regulations are Statute Law – the law of *contracts* and you do not have to contract. This doesn't mean that you can kill someone and get away with it. Common Law says do no harm and that applies to physical harm, financial harm etc. Police are employees of private corporations and there needs to be a new system of non-corporate Common Law constables operating outside the Statute Law system. If you go to davidicke.com and put Common Law into the search engine you will find videos that explain Common Law in much greater detail. It is definitely a road we should walk.

With all my heart

I have heard people say that we are in a spiritual war. I don't like the term 'war' with its Wetiko dynamic, but I know what they mean. Sweep aside all the bodily forms and we are in a situation in which two states of consciousness are seeking very different realities.

Wetiko wants upheaval, chaos, fear, suffering, conflict and control. The other wants love, peace, harmony, fairness and freedom. That's where we are. We should not fall for the idea that Wetiko is all-powerful and there's nothing we can do. Wetiko is not all-powerful. It's a joke, pathetic. It doesn't have to be, but it has made that choice for now. A handful of times over the years when I have felt the presence of its frequency I have allowed it to attach briefly so I could consciously observe its nature. The experience is not pleasant, the energy is heavy and dark, but the ease with which you can kick it back out the door shows that its real power is in persuading us that it has power. It's all a con. Wetiko is a con. It's a trickster and not a power that can control us if we unleash our own. The con is founded on manipulating humanity to give its power to Wetiko which recycles it back to present the illusion that it has power when its power is *ours* that we gave away. This happens on an energetic level and plays out in the world of the seen as humanity giving its power to Wetiko authority which uses that power to control the population when the power is only the power the population has handed over. How could it be any other way for billions to be controlled by a relative few? I have had experiences with people possessed by Wetiko and again you can kick its arse if you do it with an open heart. Oh yes – the *heart* which can transform the world of perceived 'matter'.

We are receiver-transmitters and processors of information, but what information and where from? Information is processed into perception in three main areas – the brain, the heart and the belly. These relate to thinking, knowing, and emotion. Wetiko wants us to be head and belly people which means we think within the confines of the Matrix simulation and low-vibrational emotional reaction scrambles balance and perception. A few minutes on social media and you see how emotion is the dominant force. Woke is all emotion and is therefore thought-free and fact-free. Our heart is something different. It *knows* while the head *thinks* and has to try to work it out because it doesn't know. The human energy field has seven prime vortexes which connect us with wider reality (Fig 23). Chakra means

'wheels of light' in the Sanskrit language of ancient India. The main ones are: The crown chakra on top of the head; brow (or 'third eye') chakra in the centre of the forehead; throat chakra; heart chakra in the centre of the chest; solar plexus chakra below the sternum; sacral chakra beneath the navel; and base chakra at the bottom of the spine. Each one has a particular function or functions. We feel anxiety and nervousness in the belly where the sacral chakra is located and this processes emotion that can affect the colon to give people 'the shits' or make them 'shit scared' when they are nervous. Chakras all play an important role, but the Mr and Mrs Big is the heart chakra which sits at the centre of the seven, above the chakras that connect us to the 'physical' and below those that connect with higher realms (or at least should). Here in the heart chakra we feel love, empathy and compassion – 'My heart goes out to you'. Those with closed hearts become literally 'heart-less' in their attitudes and behaviour (see Bill Gates). Native Americans portrayed Wetiko with what Paul Levy calls a 'frigid, icy heart, devoid of mercy' (see Bill Gates).

Figure 23: The chakra system which interpenetrates the human energy field. The heart chakra is the governor – or should be.

Wetiko trembles at the thought of heart energy which it cannot infiltrate. The frequency is too high. What it seeks to do instead is close the heart chakra vortex to block its perceptual and energetic influence. Psychopaths have 'hearts of stone' and emotionally-damaged people have 'heartache' and 'broken hearts'. The astonishing amount of heart disease is related to heart chakra

disruption with its fundamental connection to the 'physical' heart. Dr Tom Cowan has written an outstanding book challenging the belief that the heart is a pump and making the connection between the 'physical' and spiritual heart. Rudolph Steiner who was way ahead of his time said the same about the fallacy that the heart is a pump. *What*? The heart is not a pump? That's crazy, right? Everybody knows that. Read Cowan's *Human Heart, Cosmic Heart* and you will realise that the very idea of the heart as a pump is ridiculous when you see the evidence. How does blood in the feet so far from the heart get pumped horizontally up the body by the heart?? Cowan explains in the book the real reason why blood moves as it does. Our 'physical' heart is used to symbolise love when the source is really the heart vortex or spiritual heart which is our most powerful energetic connection to 'out there' expanded consciousness. That's why we feel *knowing* – intuitive knowing – in the centre of the chest. Knowing doesn't come from a process of thoughts leading to a conclusion. It is there in an instant all in one go. Our heart knows because of its connection to levels of awareness that *do* know. This is the meaning and source of intuition – intuitive *knowing*.

For the last more than 30 years of uncovering the global game and the nature of reality my heart has been my constant antenna for truth and accuracy. An American intelligence insider once said that I had quoted a disinformer in one of my books and yet I had only quoted the part that was true. He asked: 'How do you do that?' By using my heart antenna was the answer and anyone can do it. Heart-centred is how we are meant to be. With a closed heart chakra we withdraw into a closed mind and the bubble of five-sense reality. If you take a moment to focus your attention on the centre of your chest, picture a spinning wheel of light and see it opening and expanding. You will feel it happening, too, and perceptions of the heart like joy and love as the heart impacts on the mind as they interact. The more the chakra opens the more you will feel expressions of heart consciousness and as the process continues, and becomes part of you, insights and knowings will follow. An open

heart is connected to that level of awareness that knows all is *One*. You will see from its perspective that the fault-lines that divide us are only illusions to control us. An open heart does not process the illusions of race, creed and sexuality except as brief experiences for a consciousness that is all. Our heart does not see division, only unity (Figs 24 and 25). There's something else, too. Our hearts love to laugh. Mark Twain's quote that says 'The human race has one really effective weapon, and that is laughter' is really a reference to the heart which loves to laugh with the joy of knowing the true nature of infinite reality and that all the madness of human society is an illusion of the mind. Twain also said: 'Against the assault of laughter nothing can stand.' This is so true of Wetiko and the Cult. Their insecurity demands that they be taken seriously and their power and authority acknowledged and feared. We should do nothing of the sort. We should not get aggressive or fearful which their insecurity so desires. We should laugh in their face. Even in their no-face as police come over in their face-nappies and expect to be taken seriously. They don't take themselves seriously looking like that so why should we? Laugh in the face of intimidation. Laugh in the face of tyranny. You will see by its reaction that you have pressed all of its buttons. Wetiko does not know what to do in the face of laughter or when its targets refuse to concede their joy to fear. We have seen many examples during the 'Covid' hoax when people have expressed their energetic power and the string puppets of Wetiko retreat with their tail limp between their knees. Laugh – the world is bloody mad after all and if it's a choice between laughter and tears I know which way I'm going.

Figure 24: Head consciousness without the heart sees division and everything apart from everything else.

Figure 25: Heart consciousness sees everything as One.

'Vaccines' and the soul

The foundation of Wetiko/Archon control of humans is the separation of incarnate five-sense mind from the infinite 'I' and closing the heart chakra where the True 'I' lives during a human life. The goal has been to achieve complete separation in both cases. I was interested therefore to read an account by a French energetic healer of what she said she experienced with a patient who had been given the 'Covid' vaccine. Genuine energy healers can sense information and consciousness fields at different levels of being which are referred to as 'subtle bodies'. She described treating the patient who later returned after having, without the healer's knowledge, two doses of the 'Covid vaccine'. The healer said:

I noticed immediately the change, very heavy energy emanating from [the] subtle bodies. The scariest thing was when I was working on the heart chakra, I connected with her soul: it was detached from the physical body, it had no contact and it was, as if it was floating in a state of total confusion: a damage to the consciousness that loses contact with the physical body, i.e. with our biological machine, there is no longer any communication between them.

I continued the treatment by sending light to the heart chakra, the soul of the person, but it seemed that the soul could no longer receive any light, frequency or energy. It was a very powerful experience for me. Then I understood that this substance is indeed used to detach consciousness so that this consciousness can no longer interact through this body that it possesses in life, where there is no longer any contact, no frequency, no light, no more energetic balance or mind.

This would create a human that is rudderless and at the extreme almost zombie-like operating with a fractional state of consciousness at the mercy of Wetiko. I was especially intrigued by what the healer said in the light of the prediction by the highly-informed Rudolf Steiner more than a hundred years ago. He said:

In the future, we will eliminate the soul with medicine. Under the pretext of a 'healthy point of view', there will be a vaccine by which the human body will be treated as soon as possible directly at birth, so that the human being cannot develop the thought of the existence of soul and Spirit. To materialistic doctors will be entrusted the task of removing the soul of humanity.

As today, people are vaccinated against this disease or that disease, so in the future, children will be vaccinated with a substance that can be produced precisely in such a way that people, thanks to this vaccination, will be immune to being subjected to the 'madness' of spiritual life. He would be extremely smart, but he would not develop a conscience, and that is the true goal of some materialistic circles.

Steiner said the vaccine would detach the physical body from the etheric body (subtle bodies) and 'once the etheric body is detached the relationship between the universe and the etheric body would become extremely unstable, and man would become an automaton'. He said 'the physical body of man must be polished on this Earth by spiritual will – so the vaccine becomes a kind of arymanique (Wetiko) force' and 'man can no longer get rid of a given materialistic feeling'. Humans would then, he said, become 'materialistic of constitution and can no longer rise to the spiritual'. I have been writing for years about DNA being a receiver-transmitter of information that connects us to other levels of reality and these 'vaccines' changing DNA can be likened to changing an antenna and what it can transmit and receive. Such a disconnection would clearly lead to changes in personality and perception. Steiner further predicted the arrival of AI. Big Pharma 'Covid vaccine' makers, expressions of Wetiko, are testing their DNA-manipulating evil on children as I write with a view to giving the 'vaccine' to babies. If it's a soul-body disconnector – and I say that it is or can be – every child would be disconnected from 'soul' at birth and the 'vaccine' would create a closed system in which spiritual guidance from the greater self would play no part. This has been the ambition of Wetiko all

along. A Pentagon video from 2005 was leaked of a presentation explaining the development of vaccines to change behaviour by their effect on the brain. Those that believe this is not happening with the 'Covid' genetically-modifying procedure masquerading as a 'vaccine' should make an urgent appointment with Naivety Anonymous. Klaus Schwab wrote in 2018:

> Neurotechnologies enable us to better influence consciousness and thought and to understand many activities of the brain. They include decoding what we are thinking in fine levels of detail through new chemicals and interventions that can influence our brains to correct for errors or enhance functionality.

The plan is clear and only the heart can stop it. With every heart that opens, every mind that awakens, Wetiko is weakened. Heart and love are far more powerful than head and hate and so nothing like a majority is needed to turn this around.

Beyond the Phantom

Our heart is the prime target of Wetiko and so it must be the answer to Wetiko. We *are* our heart which is part of one heart, the infinite heart. Our heart is where the true self lives in a human life behind firewalls of five-sense illusion when an imposter takes its place – *Phantom Self*; but our heart waits patiently to be set free any time we choose to see beyond the Phantom, beyond Wetiko. A Wetikoed Phantom Self can wreak mass death and destruction while the love of forever is locked away in its heart. The time is here to unleash its power and let it sweep away the fear and despair that is Wetiko. Heart consciousness does not seek manipulated, censored, advantage for its belief or religion, its activism and desires. As an expression of the One it treats all as One with the same rights to freedom and opinion. Our heart demands fairness for itself no more than for others. From this unity of heart we can come together in mutual support and transform this Wetikoed world into what reality is meant to be – a place of love, joy, happiness, fairness, justice and freedom. Wetiko has another agenda and that's why the world is as

it is, but enough of this nonsense. Wetiko can't stay where hearts are open and it works so hard to keep them closed. Fear is its currency and its food source and love in its true sense has no fear. Why would love have fear when it knows it is *All That Is, Has Been, And Ever Can Be* on an eternal exploration of all possibility? Love in this true sense is not the physical attraction that passes for love. This can be an expression of it, yes, but Infinite Love, a love without condition, goes far deeper to the core of all being. It *is* the core of all being. Infinite realty was born from love beyond the illusions of the simulation. Love infinitely expressed is the knowing that all is One and the swiftly-passing experience of separation is a temporary hallucination. You cannot disconnect from Oneness; you can only *perceive* that you have and withdraw from its influence. This is the most important of all perception trickery by the mind parasite that is Wetiko and the foundation of all its potential for manipulation.

If we open our hearts, open the sluice gates of the mind, and redefine self-identity amazing things start to happen. Consciousness expands or contracts in accordance with self-identity. When true self is recognised as infinite awareness and label self – Phantom Self – is seen as only a series of brief experiences life is transformed. Consciousness expands to the extent that self-identity expands and everything changes. You see unity, not division, the picture, not the pixels. From this we can play the long game. No more is an experience something in and of itself, but a fleeting moment in the eternity of forever. Suddenly people in uniform and dark suits are no longer intimidating. Doing what your heart knows to be right is no longer intimidating and consequences for those actions take on the same nature of a brief experience that passes in the blink of an infinite eye. Intimidation is all in the mind. Beyond the mind there is no intimidation.

An open heart does not consider consequences for what it knows to be right. To do so would be to consider not doing what it knows to be right and for a heart in its power that is never an option. The Renegade Mind is really the Renegade Heart. Consideration of consequences will always provide a getaway car for the mind and

the heart doesn't want one. What is right in the light of what we face today is to stop cooperating with Wetiko in all its forms and to do it without fear or compromise. You cannot compromise with tyranny when tyranny always demands more until it has everything. Life is your perception and you are your destiny. Change your perception and you change your life. Change collective perception and we change the world.

Come on people … One human family, One heart, One goal … *FREEEEEEDOM*!

We must settle for nothing less.

Postscript

The big scare story as the book goes to press is the 'Indian' variant and the world is being deluged with propaganda about the 'Covid catastrophe' in India which mirrors in its lies and misrepresentations what happened in Italy before the first lockdown in 2020.

The *New York Post* published a picture of someone who had 'collapsed in the street from Covid' in India in April, 2021, which was actually taken during a gas leak in May, 2020. Same old, same old. Media articles in mid-February were asking why India had been so untouched by 'Covid' and then as their vaccine rollout gathered pace the alleged 'cases' began to rapidly increase. Indian 'Covid vaccine' maker Bharat Biotech was funded into existence by the Bill and Melinda Gates Foundation (the pair announced their divorce in May, 2021, which is a pity because they so deserve each other). The Indian 'Covid crisis' was ramped up by the media to terrify the world and prepare people for submission to still more restrictions. The scam that worked the first time was being repeated only with far more people seeing through the deceit. Davidicke.com and Ickonic.com have sought to tell the true story of what is happening by talking to people living through the Indian nightmare which has nothing to do with 'Covid'. We posted a letter from 'Alisha' in Pune who told a very different story to government and media mendacity. She said scenes of dying people and overwhelmed hospitals were designed to hide what was really happening – genocide and starvation. Alisha said that millions had already died of starvation during the ongoing lockdowns while government and media were lying and making it look like the 'virus':

Restaurants, shops, gyms, theatres, basically everything is shut. The cities are ghost towns. Even so-called 'essential' businesses are only open till 11am in the morning. You basically have just an hour to buy food and then your time is up.

Inter-state travel and even inter-district travel is banned. The cops wait at all major crossroads to question why you are traveling outdoors or to fine you if you are not wearing a mask.

The medical community here is also complicit in genocide, lying about hospitals being full and turning away people with genuine illnesses, who need immediate care. They have even created a shortage of oxygen cylinders.

This is the classic Cult modus operandi played out in every country. Alisha said that people who would not have a PCR test not testing for the 'virus' were being denied hospital treatment. She said the people hit hardest were migrant workers and those in rural areas. Most businesses employed migrant workers and with everything closed there were no jobs, no income and no food. As a result millions were dying of starvation or malnutrition. All this was happening under Prime Minister Narendra Modi, a 100-percent asset of the Cult, and it emphasises yet again the scale of pure anti-human evil we are dealing with. Australia banned its people from returning home from India with penalties for trying to do so of up to five years in jail and a fine of £37,000. The manufactured 'Covid' crisis in India was being prepared to justify further fascism in the West. Obvious connections could be seen between the Indian 'vaccine' programme and increased 'cases' and this became a common theme. The Seychelles, the most per capita 'Covid vaccinated' population in the world, went back into lockdown after a 'surge of cases'.

Long ago the truly evil Monsanto agricultural biotechnology corporation with its big connections to Bill Gates devastated Indian farming with genetically-modified crops. Human rights activist Gurcharan Singh highlighted the efforts by the Indian government to complete the job by destroying the food supply to hundreds of millions with 'Covid' lockdowns. He said that 415 million people at the bottom of the disgusting caste system (still going whatever they say) were below the poverty line and struggled to feed themselves every year. Now the government was imposing lockdown at just the

time to destroy the harvest. This deliberate policy was leading to mass starvation. People may reel back at the suggestion that a government would do that, but Wetiko-controlled 'leaders' are capable of any level of evil. In fact what is described in India is in the process of being instigated worldwide. The food chain and food supply are being targeted at every level to cause world hunger and thus control. Bill Gates is not the biggest owner of farmland in America for no reason and destroying access to food aids both the depopulation agenda and the plan for synthetic 'food' already being funded into existence by Gates. Add to this the coming hyper-inflation from the suicidal creation of fake 'money' in response to 'Covid' and the breakdown of container shipping systems and you have a cocktail that can only lead one way and is meant to. The Cult plan is to crash the entire system to 'build back better' with the Great Reset.

'Vaccine' transmission

Reports from all over the world continue to emerge of women suffering menstrual and fertility problems after having the fake 'vaccine' and of the non-'vaccinated' having similar problems when interacting with the 'vaccinated'. There are far too many for 'coincidence' to be credible. We've had menopausal women getting periods, others having periods stop or not stopping for weeks, passing clots, sometimes the lining of the uterus, breast irregularities, and miscarriages (which increased by 400 percent in parts of the United States). Non-'vaccinated' men and children have suffered blood clots and nose bleeding after interaction with the 'vaccinated'. Babies have died from the effects of breast milk from a 'vaccinated' mother. Awake doctors – the small minority – speculated on the cause of non-'vaccinated' suffering the same effects as the 'vaccinated'. Was it nanotechnology in the synthetic substance transmitting frequencies or was it a straight chemical bioweapon that was being transmitted between people? I am not saying that some kind of chemical transmission is not one possible answer, but the foundation of all that the Cult does is frequency and

this is fertile ground for understanding how transmission can happen. American doctor Carrie Madej, an internal medicine physician and osteopath, has been practicing for the last 20 years, teaching medical students, and she says attending different meetings where the agenda for humanity was discussed. Madej, who operates out of Georgia, did not dismiss other possible forms of transmission, but she focused on frequency in search of an explanation for transmission. She said the Moderna and Pfizer 'vaccines' contained nano-lipid particles as a key component. This was a brand new technology never before used on humanity. 'They're using a nanotechnology which is pretty much little tiny computer bits … nanobots or hydrogel.' Inside the 'vaccines' was 'this sci-fi kind of substance' which suppressed immune checkpoints to get into the cell. I referred to this earlier as the 'Trojan horse' technique that tricks the cell into opening a gateway for the self-replicating synthetic material and while the immune system is artificially suppressed the body has no defences. Madej said the substance served many purposes including an on-demand ability to 'deliver the payload' and using the nano 'computer bits' as biosensors in the body. 'It actually has the ability to accumulate data from your body, like your breathing, your respiration, thoughts, emotions, all kinds of things.'

She said the technology obviously has the ability to operate through Wi-Fi and transmit and receive energy, messages, frequencies or impulses. 'Just imagine you're getting this new substance in you and it can react to things all around you, the 5G, your smart device, your phones.' We had something completely foreign in the human body that had never been launched large scale at a time when we were seeing 5G going into schools and hospitals (plus the Musk satellites) and she believed the 'vaccine' transmission had something to do with this: '… if these people have this inside of them … it can act like an antenna and actually transmit it outwardly as well.' The synthetic substance produced its own voltage and so it could have that kind of effect. This fits with my own contention that the nano receiver-transmitters are designed to connect people to the

Smart Grid and break the receiver-transmitter connection to expanded consciousness. That would explain the French energy healer's experience of the disconnection of body from 'soul' with those who have had the 'vaccine'. The nanobots, self-replicating inside the body, would also transmit the synthetic frequency which could be picked up through close interaction by those who have not been 'vaccinated'. Madej speculated that perhaps it was 5G and increased levels of other radiation that was causing the symptoms directly although interestingly she said that non-'vaccinated' patients had shown improvement when they were away from the 'vaccinated' person they had interacted with. It must be remembered that you can control frequency and energy with your mind and you can consciously create energetic barriers or bubbles with the mind to stop damaging frequencies from penetrating your field. American paediatrician Dr Larry Palevsky said the 'vaccine' was not a 'vaccine' and was never designed to protect from a 'viral' infection. He called it 'a massive, brilliant propaganda of genocide' because they didn't have to inject everyone to get the result they wanted. He said the content of the jabs was able to infuse any material into the brain, heart, lungs, kidneys, liver, sperm and female productive system. 'This is genocide; this is a weapon of mass destruction.' At the same time American colleges were banning students from attending if they didn't have this life-changing and potentially life-ending 'vaccine'. Class action lawsuits must follow when the consequences of this college fascism come to light. As the book was going to press came reports about fertility effects on sperm in 'vaccinated' men which would absolutely fit with what I have been saying and hospitals continued to fill with 'vaccine' reactions. Another question is what about transmission via blood transfusions? The NHS has extended blood donation restrictions from seven days after a 'Covid vaccination' to 28 days after even a sore arm reaction.

I said in the spring of 2020 that the then touted 'Covid vaccine' would be ongoing each year like the flu jab. A year later Pfizer CEO, the appalling Albert Bourla, said people would 'likely' need a 'booster dose' of the 'vaccine' within 12 months of getting 'fully

vaccinated' and then a yearly shot. 'Variants will play a key role', he said confirming the point. Johnson & Johnson CEO Alex Gorsky also took time out from his 'vaccine' disaster to say that people may need to be vaccinated against 'Covid-19' each year. UK Health Secretary, the psychopath Matt Hancock, said additional 'boosters' would be available in the autumn of 2021. This is the trap of the 'vaccine passport'. The public will have to accept every last 'vaccine' they introduce, including for the fake 'variants', or it would cease to be valid. The only other way in some cases would be continuous testing with a test not testing for the 'virus' and what is on the swabs constantly pushed up your noise towards the brain every time?

'Vaccines' changing behaviour

I mentioned in the body of the book how I believed we would see gathering behaviour changes in the 'vaccinated' and I am already hearing such comments from the non-'vaccinated' describing behaviour changes in friends, loved ones and work colleagues. This will only increase as the self-replicating synthetic material and nanoparticles expand in body and brain. An article in the *Guardian* in 2016 detailed research at the University of Virginia in Charlottesville which developed a new method for controlling brain circuits associated with complex animal behaviour. The method, dubbed 'magnetogenetics', involves genetically-engineering a protein called ferritin, which stores and releases iron, to create a magnetised substance – 'Magneto' – that can activate specific groups of nerve cells from a distance. This is claimed to be an advance on other methods of brain activity manipulation known as optogenetics and chemogenetics (the Cult has been developing methods of brain control for a long time). The ferritin technique is said to be non-invasive and able to activate neurons 'rapidly and reversibly'. In other words, human thought and perception. The article said that earlier studies revealed how nerve cell proteins 'activated by heat and mechanical pressure can be genetically engineered so that they become sensitive to radio waves and magnetic fields, by attaching them to an iron-storing protein called ferritin, or to inorganic

paramagnetic particles'. Sensitive to radio waves and magnetic fields? You mean like 5G, 6G and 7G? This is the human-AI Smart Grid hive mind we are talking about. The *Guardian* article said:

> … the researchers injected Magneto into the striatum of freely behaving mice, a deep brain structure containing dopamine-producing neurons that are involved in reward and motivation, and then placed the animals into an apparatus split into magnetised and non-magnetised sections.
>
> Mice expressing Magneto spent far more time in the magnetised areas than mice that did not, because activation of the protein caused the striatal neurons expressing it to release dopamine, so that the mice found being in those areas rewarding. This shows that Magneto can remotely control the firing of neurons deep within the brain, and also control complex behaviours.

Make no mistake this basic methodology will be part of the 'Covid vaccine' cocktail and using magnetics to change brain function through electromagnetic field frequency activation. The Pentagon is developing a 'Covid vaccine' using ferritin. Magnetics would explain changes in behaviour and why videos are appearing across the Internet as I write showing how magnets stick to the skin at the point of the 'vaccine' shot. Once people take these 'vaccines' anything becomes possible in terms of brain function and illness which will be blamed on 'Covid-19' and 'variants'. Magnetic field manipulation would further explain why the non-'vaccinated' are reporting the same symptoms as the 'vaccinated' they interact with and why those symptoms are reported to decrease when not in their company. Interestingly 'Magneto', a 'mutant', is a character in the Marvel Comic *X-Men* stories with the ability to manipulate magnetic fields and he believes that mutants should fight back against their human oppressors by any means necessary. The character was born Erik Lehnsherr to a Jewish family in Germany.

Cult-controlled courts

The European Court of Human Rights opened the door for mandatory 'Covid-19 vaccines' across the continent when it ruled in a Czech Republic dispute over childhood immunisation that legally

enforced vaccination could be 'necessary in a democratic society'. The 17 judges decided that compulsory vaccinations did not breach human rights law. On the face of it the judgement was so inverted you gasp for air. If not having a vaccine infused into your body is not a human right then what is? Ah, but they said human rights law which has been specifically written to delete all human rights at the behest of the state (the Cult). Article 8 of the European Convention on Human Rights relates to the right to a private life. The crucial word here is *'except'*:

> There shall be no interference by a public authority with the exercise of this right EXCEPT such as is in accordance with the law and is necessary in a democratic society in the interests of national security, public safety or the economic wellbeing of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others [My emphasis].

No interference *except* in accordance with the law means there *are* no 'human rights' *except* what EU governments decide you can have at their behest. 'As is necessary in a democratic society' explains that reference in the judgement and 'in the interests of national security, public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others' gives the EU a coach and horses to ride through 'human rights' and scatter them in all directions. The judiciary is not a check and balance on government extremism; it is a vehicle to enforce it. This judgement was almost laughably predictable when the last thing the Cult wanted was a decision that went against mandatory vaccination. Judges rule over and over again to benefit the system of which they are a part. Vaccination disputes that come before them are invariably delivered in favour of doctors and authorities representing the view of the state which owns the judiciary. Oh, yes, and we have even had calls to stop putting 'Covid-19' on death certificates within 28 days of a 'positive test' because it is claimed the practice makes the 'vaccine' appear not to work. They are laughing at you.

The scale of madness, inhumanity and things to come was highlighted when those not 'vaccinated' for 'Covid' were refused evacuation from the Caribbean island of St Vincent during massive volcanic eruptions. Cruise ships taking residents to the safety of another island allowed only the 'vaccinated' to board and the rest were left to their fate. Even in life and death situations like this we see 'Covid' stripping people of their most basic human instincts and the insanity is even more extreme when you think that fake 'vaccine'-makers are not even claiming their body-manipulating concoctions stop 'infection' and 'transmission' of a 'virus' that doesn't exist. St Vincent Prime Minister Ralph Gonsalves said: 'The chief medical officer will be identifying the persons already vaccinated so that we can get them on the ship.' Note again the power of the chief medical officer who, like Whitty in the UK, will be answering to the World Health Organization. This is the Cult network structure that has overridden politicians who 'follow the science' which means doing what WHO-controlled 'medical officers' and 'science advisers' tell them. Gonsalves even said that residents who were 'vaccinated' after the order so they could board the ships would still be refused entry due to possible side effects such as 'wooziness in the head'. The good news is that if they were woozy enough in the head they could qualify to be prime minister of St Vincent.

Microchipping freedom

The European judgement will be used at some point to justify moves to enforce the 'Covid' DNA-manipulating procedure. Sandra Ro, CEO of the Global Blockchain Business Council, told a World Economic Forum event that she hoped 'vaccine passports' would help to 'drive forced consent and standardisation' of global digital identity schemes: 'I'm hoping with the desire and global demand for some sort of vaccine passport – so that people can get travelling and working again – [it] will drive forced consent, standardisation, and frankly, cooperation across the world.' The lady is either not very bright, or thoroughly mendacious, to use the term 'forced consent'.

You do not 'consent' if you are forced – you *submit*. She was describing what the plan has been all along and that's to enforce a digital identity on every human without which they could not function. 'Vaccine passports' are opening the door and are far from the end goal. A digital identity would allow you to be tracked in everything you do in cyberspace and this is the same technique used by Cult-owned China to enforce its social credit system of total control. The ultimate 'passport' is planned to be a microchip as my books have warned for nearly 30 years. Those nice people at the Pentagon working for the Cult-controlled Defense Advanced Research Projects Agency (DARPA) claimed in April, 2021, they have developed a microchip inserted under the skin to detect 'asymptomatic Covid-19 infection' before it becomes an outbreak and a 'revolutionary filter' that can remove the 'virus' from the blood when attached to a dialysis machine. The only problems with this are that the 'virus' does not exist and people transmitting the 'virus' with no symptoms is brain-numbing bullshit. This is, of course, not a ruse to get people to be microchipped for very different reasons. DARPA also said it was producing a one-stop 'vaccine' for the 'virus' and all 'variants'. One of the most sinister organisations on Planet Earth is doing this? Better have it then. These people are insane because Wetiko that possesses them is insane.

Researchers from the Salk Institute in California announced they have created an embryo that is part human and part monkey. My books going back to the 1990s have exposed experiments in top secret underground facilities in the United States where humans are being crossed with animal and non-human 'extraterrestrial' species. They are now easing that long-developed capability into the public arena and there is much more to come given we are dealing with psychiatric basket cases. Talking of which – Elon Musk's scientists at Neuralink trained a monkey to play Pong and other puzzles on a computer screen using a joystick and when the monkey made the correct move a metal tube squirted banana smoothie into his mouth which is the basic technique for training humans into unquestioning compliance. Two Neuralink chips were in the monkey's skull and

more than 2,000 wires 'fanned out' into its brain. Eventually the monkey played a video game purely with its brain waves. Psychopathic narcissist Musk said the 'breakthrough' was a step towards putting Neuralink chips into human skulls and merging minds with artificial intelligence. *Exactly*. This man is so dark and Cult to his DNA.

World Economic Fascism (WEF)

The World Economic Forum is telling you the plan by the statements made at its many and various events. Cult-owned fascist YouTube CEO Susan Wojcicki spoke at the 2021 WEF Global Technology Governance Summit (see the name) in which 40 governments and 150 companies met to ensure 'the responsible design and deployment of emerging technologies'. Orwellian translation: 'Ensuring the design and deployment of long-planned technologies will advance the Cult agenda for control and censorship.' Freedom-destroyer and Nuremberg-bound Wojcicki expressed support for tech platforms like hers to censor content that is 'technically legal but could be harmful'. Who decides what is 'harmful'? She does and they do. 'Harmful' will be whatever the Cult doesn't want people to see and we have legislation proposed by the UK government that would censor content on the basis of 'harm' no matter if the information is fair, legal and provably true. Make that *especially* if it is fair, legal and provably true. Wojcicki called for a global coalition to be formed to enforce content moderation standards through automated censorship. This is a woman and mega-censor so self-deluded that she shamelessly accepted a 'free expression' award – *Wojcicki* – in an event sponsored by her own *YouTube*. They have no shame and no self-awareness.

You know that 'Covid' is a scam and Wojcicki a Cult operative when YouTube is censoring medical and scientific opinion purely on the grounds of whether it supports or opposes the Cult 'Covid' narrative. Florida governor Ron DeSantis compiled an expert panel with four professors of medicine from Harvard, Oxford, and Stanford Universities who spoke against forcing children and

vaccinated people to wear masks. They also said there was no proof that lockdowns reduced spread or death rates of 'Covid-19'. Cult-gofer Wojcicki and her YouTube deleted the panel video 'because it included content that contradicts the consensus of local and global health authorities regarding the efficacy of masks to prevent the spread of Covid-19'. This 'consensus' refers to what the Cult tells the World Health Organization to say and the WHO tells 'local health authorities' to do. Wojcicki knows this, of course. The panellists pointed out that censorship of scientific debate was responsible for deaths from many causes, but Wojcicki couldn't care less. She would not dare go against what she is told and as a disgrace to humanity she wouldn't want to anyway. The UK government is seeking to pass a fascist 'Online Safety Bill' to specifically target with massive fines and other means non-censored video and social media platforms to make them censor 'lawful but harmful' content like the Cult-owned Facebook, Twitter, Google and YouTube. What is 'lawful but harmful' would be decided by the fascist Blair-created Ofcom.

Another WEF obsession is a cyber-attack on the financial system and this is clearly what the Cult has planned to take down the bank accounts of everyone – except theirs. Those that think they have enough money for the Cult agenda not to matter to them have got a big lesson coming if they continue to ignore what is staring them in the face. The World Economic Forum, funded by Gates and fronted by Klaus Schwab, announced it would be running a 'simulation' with the Russian government and global banks of just such an attack called Cyber Polygon 2021. What they simulate – as with the 'Covid' Event 201 – they plan to instigate. The WEF is involved in a project with the Cult-owned Carnegie Endowment for International Peace called the WEF-Carnegie Cyber Policy Initiative which seeks to merge Wall Street banks, 'regulators' (I love it) and intelligence agencies to 'prevent' (arrange and allow) a cyber-attack that would bring down the global financial system as long planned by those that control the WEF and the Carnegie operation. The Carnegie Endowment for International Peace sent an instruction to First World

War US President Woodrow Wilson not to let the war end before society had been irreversibly transformed.

The Wuhan lab diversion

As I close, the Cult-controlled authorities and lapdog media are systematically pushing 'the virus was released from the Wuhan lab' narrative. There are two versions – it happened by accident and it happened on purpose. Both are nonsense. The perceived existence of the never-shown-to-exist 'virus' is vital to sell the impression that there is actually an infective agent to deal with and to allow the endless potential for terrifying the population with 'variants' of a 'virus' that does not exist. The authorities at the time of writing are going with the 'by accident' while the alternative media is promoting the 'on purpose'. Cable news host Tucker Carlson who has questioned aspects of lockdown and 'vaccine' compulsion has bought the Wuhan lab story. 'Everyone now agrees' he said. Well, I don't and many others don't and the question is *why* does the system and its media suddenly 'agree'? When the media moves as one unit with a narrative it is always a lie – witness the hour by hour mendacity of the 'Covid' era. Why would this Cult-owned combination which has unleashed lies like machine gun fire suddenly 'agree' to tell the truth??

Much of the alternative media is buying the lie because it fits the conspiracy narrative, but it's the *wrong* conspiracy. The real conspiracy is that *there is no virus* and that is what the Cult is desperate to hide. The idea that the 'virus' was released by accident is ludicrous when the whole 'Covid' hoax was clearly long-planned and waiting to be played out as it was so fast in accordance with the Rockefeller document and Event 201. So they prepared everything in detail over decades and then sat around strumming their fingers waiting for an 'accidental' release from a bio-lab? *What??* It's crazy. Then there's the 'on purpose' claim. You want to circulate a 'deadly virus' and hide the fact that you've done so and you release it down the street from the highest-level bio-lab in China? I repeat – *What??*

You would release it far from that lab to stop any association being made. But, no, we'll do it in a place where the connection was certain to be made. Why would you need to scam 'cases' and 'deaths' and pay hospitals to diagnose 'Covid-19' if you had a real 'virus'? What are sections of the alternative media doing believing this crap? Where were all the mass deaths in Wuhan from a 'deadly pathogen' when the recovery to normal life after the initial propaganda was dramatic in speed? Why isn't the 'deadly pathogen' now circulating all over China with bodies in the street? Once again we have the technique of tell them what they want to hear and they will likely believe it. The alternative media has its 'conspiracy' and with Carlson it fits with his 'China is the danger' narrative over years. China *is* a danger as a global Cult operations centre, but not for this reason. The Wuhan lab story also has the potential to instigate conflict with China when at some stage the plan is to trigger a Problem-Reaction-Solution confrontation with the West. Question everything – *everything* – and especially when the media agrees on a common party line.

Third wave ... fourth wave ... fifth wave ...

As the book went into production the world was being set up for more lockdowns and a 'third wave' supported by invented 'variants' that were increasing all the time and will continue to do so in public statements and computer programs, but not in reality. India became the new Italy in the 'Covid' propaganda campaign and we were told to be frightened of the new 'Indian strain'. Somehow I couldn't find it within myself to do so. A document produced for the UK government entitled 'Summary of further modelling of easing of restrictions – Roadmap Step 2' declared that a third wave was inevitable (of course when it's in the script) and it would be the fault of children and those who refuse the health-destroying fake 'Covid vaccine'. One of the computer models involved came from the Cult-owned *Imperial College* and the other from Warwick University which I wouldn't trust to tell me the date in a calendar factory. The document states that both models presumed extremely high uptake

of the 'Covid vaccines' and didn't allow for 'variants'. The document states: 'The resurgence is a result of some people (mostly children) being ineligible for vaccination; others choosing not to receive the vaccine; and others being vaccinated but not perfectly protected.' The mendacity takes the breath away. Okay, blame those with a brain who won't take the DNA-modifying shots and put more pressure on children to have it as 'trials' were underway involving children as young as six months with parents who give insanity a bad name. Massive pressure is being put on the young to have the fake 'vaccine' and child age consent limits have been systematically lowered around the world to stop parents intervening. Most extraordinary about the document was its claim that the 'third wave' would be driven by 'the resurgence in both hospitalisations and deaths … dominated by *those that have received two doses of the vaccine*, comprising around 60-70% of the wave respectively'. The predicted peak of the 'third wave' suggested 300 deaths per day with 250 of them *fully 'vaccinated' people*. How many more lies do acquiescers need to be told before they see the obvious? Those who took the jab to 'protect themselves' are projected to be those who mostly get sick and die? So what's in the 'vaccine'? The document went on:

> It is possible that a summer of low prevalence could be followed by substantial increases in incidence over the following autumn and winter. Low prevalence in late summer should not be taken as an indication that SARS-CoV-2 has retreated or that the population has high enough levels of immunity to prevent another wave.

They are telling you the script and while many British people believed 'Covid' restrictions would end in the summer of 2021 the government was preparing for them to be ongoing. Authorities were awarding contracts for 'Covid marshals' to police the restrictions with contracts starting in July, 2021, and going through to January 31st, 2022, and the government was advertising for 'Media Buying Services' to secure media propaganda slots worth a potential £320 million for 'Covid-19 campaigns' with a contract not ending until March, 2022. The recipient – via a list of other front companies – was reported to be American media marketing giant Omnicom Group

Inc. While money is no object for 'Covid' the UK waiting list for all other treatment – including life-threatening conditions – passed 4.5 million. Meantime the Cult is seeking to control all official 'inquiries' to block revelations about what has really been happening and why. It must not be allowed to – we need Nuremberg jury trials in every country. The cover-up doesn't get more obvious than appointing ultra-Zionist professor Philip Zelikow to oversee two dozen US virologists, public health officials, clinicians, former government officials and four American 'charitable foundations' to 'learn the lessons' of the 'Covid' debacle. The personnel will be those that created and perpetuated the 'Covid' lies while Zelikow is the former executive director of the 9/11 Commission who ensured that the truth about those attacks never came out and produced a report that must be among the most mendacious and manipulative documents ever written – see *The Trigger* for the detailed exposure of the almost unimaginable 9/11 story in which Sabbatians can be found at every level.

Passive no more

People are increasingly challenging the authorities with amazing numbers of people taking to the streets in London well beyond the ability of the Face-Nappies to stop them. Instead the Nappies choose situations away from the mass crowds to target, intimidate, and seek to promote the impression of 'violent protestors'. One such incident happened in London's Hyde Park. Hundreds of thousands walking through the streets in protest against 'Covid' fascism were ignored by the Cult-owned BBC and most of the rest of the mainstream media, but they delighted in reporting how police were injured in 'clashes with protestors'. The truth was that a group of people gathered in Hyde Park at the end of one march when most had gone home and they were peacefully having a good time with music and chat. Face-Nappies who couldn't deal with the full-march crowd then waded in with their batons and got more than they bargained for. Instead of just standing for this criminal brutality the crowd used their numerical superiority to push the Face-Nappies out of the

park. Eventually the Nappies turned and ran. Unfortunately two or three idiots in the crowd threw drink cans striking two officers which gave the media and the government the image they wanted to discredit the 99.9999 percent who were peaceful. The idiots walked straight into the trap and we must always be aware of potential agent provocateurs used by the authorities to discredit their targets.

This response from the crowd – the can people apart – must be a turning point when the public no longer stand by while the innocent are arrested and brutally attacked by the Face-Nappies. That doesn't mean to be violent, that's the last thing we need. We'll leave the violence to the Face-Nappies and government. But it does mean that when the Face-Nappies use violence against peaceful people the numerical superiority is employed to stop them and make citizen's arrests or Common Law arrests for a breach of the peace. The time for being passive in the face of fascism is over.

We are the many, they are the few, and we need to make that count before there is no freedom left and our children and grandchildren face an ongoing fascist nightmare.

COME ON PEOPLE – IT'S TIME.

One final thought …

The power of love
A force from above
Cleaning my soul
Flame on burn desire
Love with tongues of fire
Purge the soul
Make love your goal

I'll protect you from the hooded claw
Keep the vampires from your door
When the chips are down I'll be around
With my undying, death-defying
Love for you

Envy will hurt itself
Let yourself be beautiful
Sparkling love, flowers
And pearls and pretty girls
Love is like an energy
Rushin' rushin' inside of me

This time we go sublime
Lovers entwine, divine, divine,
Love is danger, love is pleasure
Love is pure – the only treasure

I'm so in love with you
Purge the soul
Make love your goal

The power of love
A force from above
Cleaning my soul
The power of love
A force from above
A sky-scraping dove

Flame on burn desire
Love with tongues of fire
Purge the soul
Make love your goal

Frankie Goes To Hollywood

APPENDIX

Cowan-Kaufman-Morell Statement on Virus Isolation (SOVI)

Isolation: The action of isolating; the fact or condition of being isolated or standing alone; separation from other things or persons; solitariness
Oxford English Dictionary

The controversy over whether the SARS-CoV-2 virus has ever been isolated or purified continues. However, using the above definition, common sense, the laws of logic and the dictates of science, any unbiased person must come to the conclusion that the SARS-CoV-2 virus has never been isolated or purified. As a result, no confirmation of the virus' existence can be found. The logical, common sense, and scientific consequences of this fact are:

- the structure and composition of something not shown to exist can't be known, including the presence, structure, and function of any hypothetical spike or other proteins;
- the genetic sequence of something that has never been found can't be known;
- "variants" of something that hasn't been shown to exist can't be known;
- it's impossible to demonstrate that SARS-CoV-2 causes a disease called Covid-19.

In as concise terms as possible, here's the proper way to isolate, characterize and demonstrate a new virus. First, one takes samples (blood, sputum, secretions) from many people (e.g. 500) with symptoms which are unique and specific enough to characterize an illness. Without mixing these samples with ANY tissue or products that also contain genetic material, the virologist macerates, filters and ultracentrifuges i.e. *purifies* the specimen. This common virology technique, done for decades to isolate bacteriophages[1] and so-called giant viruses in every virology lab, then allows the virologist to demonstrate with electron microscopy thousands of identically sized and shaped particles. These particles are the isolated and purified virus.

These identical particles are then checked for uniformity by physical and/or microscopic techniques. Once the purity is determined, the particles may be further characterized. This would include examining the structure, morphology, and chemical composition of the particles. Next, their genetic makeup is characterized by extracting the genetic material directly from the purified particles and using genetic-sequencing techniques, such as Sanger sequencing, that have also been around for decades. Then one does an analysis to confirm that these uniform particles are exogenous (outside) in origin as a virus is conceptualized to be, and not the normal breakdown products of dead and dying tissues.[2] (As of May 2020, we know that virologists have no way to determine whether the particles they're seeing are viruses or just normal breakdown products of dead and dying tissues.)[3]

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1 Isolation, characterization and analysis of bacteriophages from the haloalkaline lake Elmenteita, KenyaJuliah Khayeli Akhwale et al, PLOS One, Published: April 25, 2019. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0215734 – accessed 2/15/21

2 "Extracellular Vesicles Derived From Apoptotic Cells: An Essential Link Between Death and Regeneration," Maojiao Li1 et al, Frontiers in Cell and Developmental Biology, 2020 October 2. https://www.frontiersin.org/articles/10.3389/fcell.2020.573511/full – accessed 2/15/21

3 "The Role of Extraellular Vesicles as Allies of HIV, HCV and SARS Viruses," Flavia Giannessi, et al, Viruses, 2020 May

If we have come this far then we have fully isolated, characterized, and genetically sequenced an exogenous virus particle. However, we still have to show it is causally related to a disease. This is carried out by exposing a group of healthy subjects (animals are usually used) to this isolated, purified virus in the manner in which the disease is thought to be transmitted. If the animals get sick with the same disease, as confirmed by clinical and autopsy findings, one has now shown that the virus actually causes a disease. This demonstrates infectivity and transmission of an infectious agent.

None of these steps has even been attempted with the SARS-CoV-2 virus, nor have all these steps been successfully performed for any so-called pathogenic virus. Our research indicates that a single study showing these steps does not exist in the medical literature.

Instead, since 1954, virologists have taken unpurified samples from a relatively few people, often less than ten, with a similar disease. They then minimally process this sample and inoculate this unpurified sample onto tissue culture containing usually four to six other types of material – all of which contain identical genetic material as to what is called a "virus." The tissue culture is starved and poisoned and naturally disintegrates into many types of particles, some of which contain genetic material. Against all common sense, logic, use of the English language and scientific integrity, this process is called "virus isolation." This brew containing fragments of genetic material from many sources is then subjected to genetic analysis, which then creates in a computer-simulation process the alleged sequence of the alleged virus, a so called in silico genome. At no time is an actual virus confirmed by electron microscopy. At no time is a genome extracted and sequenced from an actual virus. This is scientific fraud.

The observation that the unpurified specimen — inoculated onto tissue culture along with toxic antibiotics, bovine fetal tissue, amniotic fluid and other tissues — destroys the kidney tissue onto which it is inoculated is given as evidence of the virus' existence and pathogenicity. This is scientific fraud.

From now on, when anyone gives you a paper that suggests the SARS-CoV-2 virus has been isolated, please check the methods sections. If the researchers used Vero cells or any other culture method, you know that their process was not isolation. You will hear the following excuses for why actual isolation isn't done:

1. There were not enough virus particles found in samples from patients to analyze.

2. Viruses are intracellular parasites; they can't be found outside the cell in this manner.

If No. 1 is correct, and we can't find the virus in the sputum of sick people, then on what evidence do we think the virus is dangerous or even lethal? If No. 2 is correct, then how is the virus spread from person to person? We are told it emerges from the cell to infect others. Then why isn't it possible to find it?

Finally, questioning these virology techniques and conclusions is not some distraction or divisive issue. Shining the light on this truth is essential to stop this terrible fraud that humanity is confronting. For, as we now know, if the virus has never been isolated, sequenced or shown to cause illness, if the virus is imaginary, then why are we wearing masks, social distancing and putting the whole world into prison?

Finally, if pathogenic viruses don't exist, then what is going into those injectable devices erroneously called "vaccines," and what is their purpose? This scientific question is the most urgent and relevant one of our time.

We are correct. The SARS-CoV2 virus does not exist.

Sally Fallon Morell, MA
Dr. Thomas Cowan, MD
Dr. Andrew Kaufman, MD

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Ickonic is something that has been a dream of mine for the last 5 years, growing up around alternative information I have always had a natural interest in what is going on in the World and what could I do to make it better.
Across the range of subjects and positions of influence occupied mainly by people who don't strive to make things better it's the Media that I have always found the most frustrating and fascinating. Mainly because if the Media did their Jobs properly then so much of the negative things happening in the World simply would not be able to happen, because they would be exposed within a heartbeat.
Free Press and the Opportunities that the internet could have given would mean that the Media are able to expose things like never before and hold people to account for their actions. As we all know there are 'Untouchables' that walk among us, people the Media simply won't touch, expose or investigate and that leads to the dark underworlds that infest the establishment the World over.
Well I say enough, it's time for something different, a different kind of Media, where no one is off limits from exposing and investigating. All we're interested in at Ickonic is the truth of what is really going on in the World on whichever subject we're covering.
We hope you enjoy what we have created and take something away from the platform, we aim to deliver information that's informative and most importantly self-empowering, you're not a little person, you're part of something much bigger than that and its time we as a collective race began to understand that and look to the future as ours to take.

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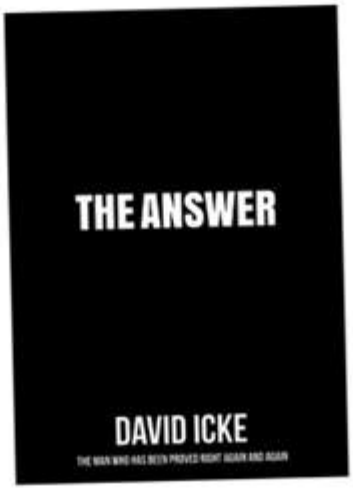

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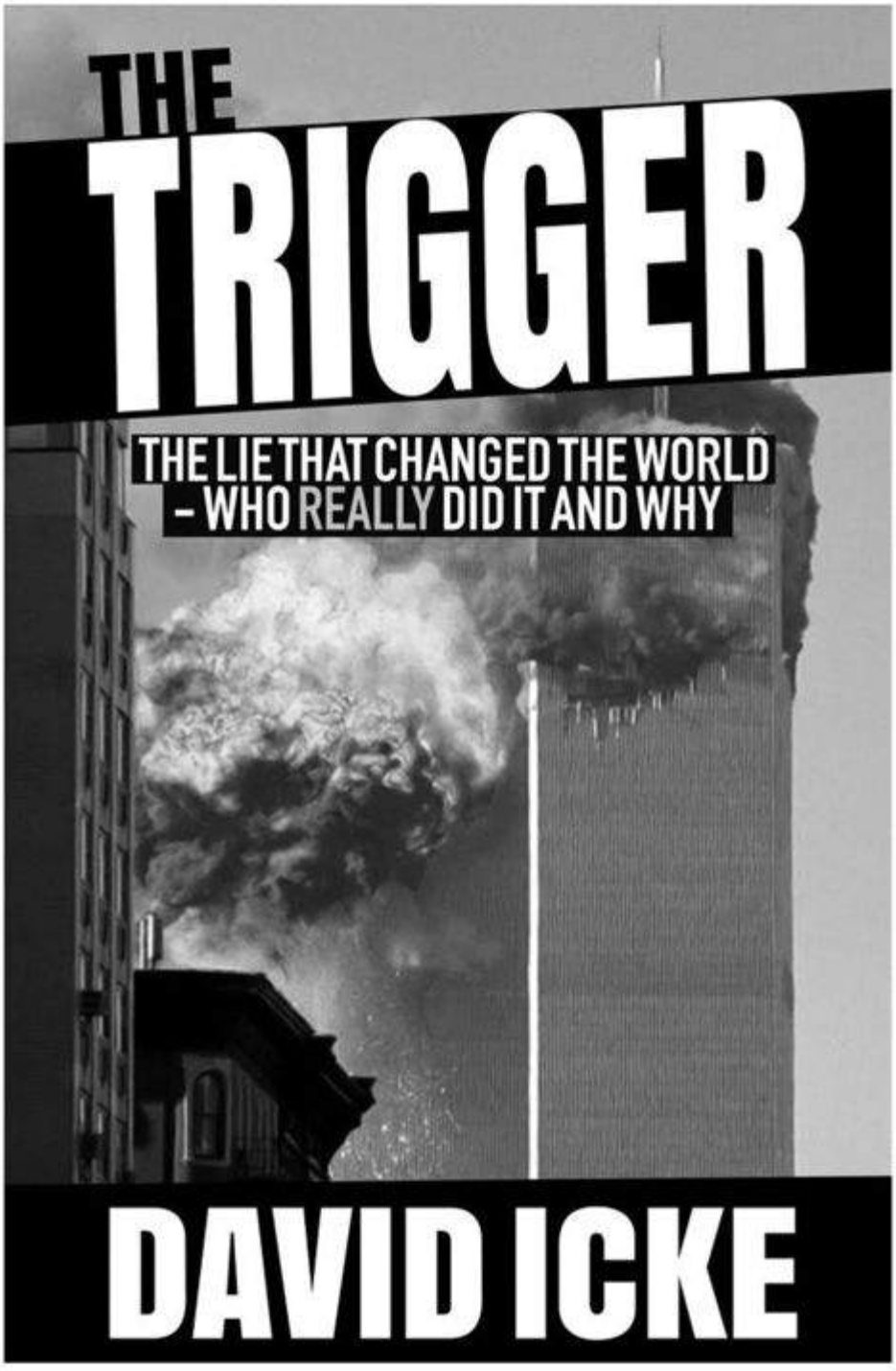
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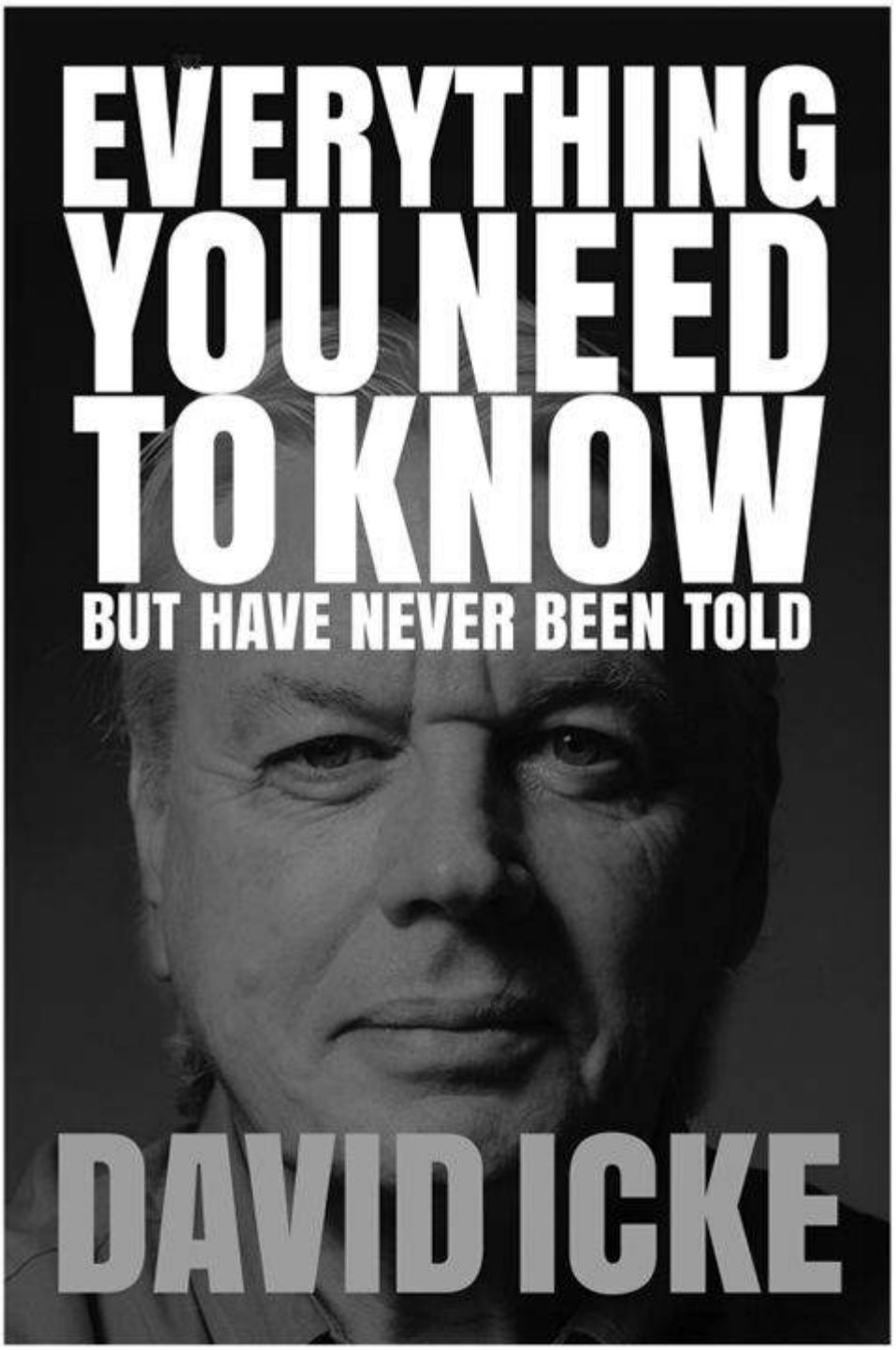
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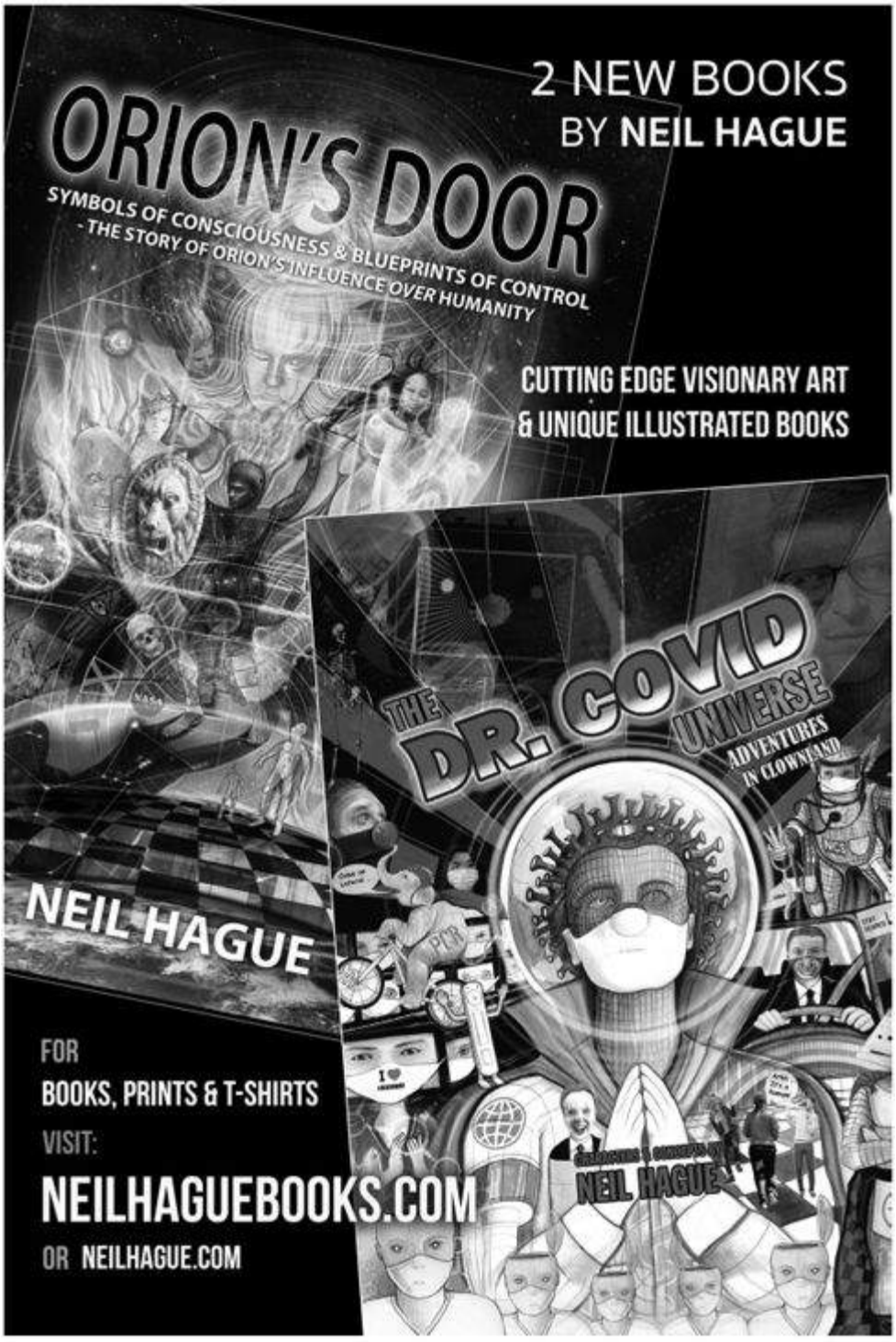
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